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# THE JOURNAL OF MENTAL SCIENCE

*(Published by Authority of the Medico-Psychological Association).*

EDITED BY  
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AND  
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"Nos vero intellectum longius a rebus abstractimus quam ut rerum imagines et  
radii (ut in sensu fit) coire possint."



Francis Bacon, *Proleg. Instaurat. Mag.*

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"IN adopting our title of the *Journal of Mental Science*, published by authority of the *Medico-Psychological Association*, we profess that we cultivate in our pages mental science of a particular kind, namely, such mental science as appertains to medical men who are engaged in the treatment of the insane. But it has been objected that the term mental science is inapplicable, and that the terms, mental physiology, or mental pathology, or psychology, or psychiatry (a term much affected by our German brethren), would have been more correct and appropriate; and that, moreover, we do not deal in mental science, which is properly the sphere of the aspiring metaphysical intellect. If mental science is strictly synonymous with metaphysics, these objections are certainly valid, for although we do not eschew metaphysical discussion, the aim of this Journal is certainly bent upon more attainable objects than the pursuit of those recondite inquiries which have occupied the most ambitious intellects from the time of Plato to the present, with so much labour and so little result. But while we admit that metaphysics may be called one department of mental science, we maintain that mental physiology and mental pathology are also mental science under a different aspect. While metaphysics may be called speculative mental science, mental physiology and pathology, with their vast range of inquiry into insanity, education, crime, and all things which tend to preserve mental health, or to produce mental disease, are not less questions of mental science in its practical, that is, in its sociological point of view. If it were not unjust to high mathematics to compare it in any way with abstruse metaphysics, it would illustrate our meaning to say that our practical mental science would fairly bear the same relation to the mental science of the metaphysicians as applied mathematics bears to the pure science. In both instances the aim of the pure science is the attainment of abstract truth; its utility, however, frequently going no further than to serve as a gymnasium for the intellect. In both instances the mixed science aims at, and, to a certain extent, attains immediate practical results of the greatest utility to the welfare of mankind; we therefore maintain that our Journal is not inaptly called the *Journal of Mental Science*, although the science may only attempt to deal with sociological and medical inquiries, relating either to the preservation of the health of the mind or to the amelioration or cure of its diseases; and although not soaring to the height of abstruse metaphysics, we only aim at such metaphysical knowledge as may be available to our purposes, as the mechanician uses the formularies of mathematics. This is our view of the kind of mental science which physicians engaged in the grave responsibility of caring for the mental health of their fellow men, may, in all modesty, pretend to cultivate; and while we cannot doubt that all additions to our certain knowledge in the speculative department of the science will be great gain, the necessities of duty and of danger must ever compel us to pursue that knowledge which is to be obtained in the practical departments of science, with the earnestness of real workmen. The captain of a ship would be none the worse for being well acquainted with the higher branches of astronomical science, but it is the practical part of that science as it is applicable to navigation which he is compelled to study."—J. C. Bucknill, M.D., F.R.S.

# THE JOURNAL OF MENTAL SCIENCE.

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VOL. XXI.

## PART 1.—ORIGINAL ARTICLES.

*The Morisonian Lectures on Insanity for 1873.* By the late DAVID SKAE, M.D., F.R.C.S.E., Physician-Superintendent of the Royal Edinburgh Asylum, &c., &c. Edited by T. S. CLOUSTON, M.D., F.R.S.E.

(Continued from Vol. xx., p. 211.)

### LECTURE V.\*

*Syphilitic Insanity.*—This is the first of the varieties of insanity in Dr. Skae's classification that is due to the action of a poison introduced from without. As might be expected, its symptoms are much more definite than those of the more constitutional and hereditary varieties of mental alienation. Something, too, is known of its pathology, and yet it is only about twenty years since the fact was recognised that the syphilitic poison could produce mental derangement at all. It has been described by English, French, and German authors on insanity and syphilis, but Dr. Wille, the latest German writer on the subject, has given us by far the most complete account of the disease in all its forms so far as it is at present known. An excellent abstract of his paper appeared in the "Journal of Mental Science" for January last, by Dr. Addison.† It is one of the forms of insanity that must be studied in connection with the other syphilitic affections of the nervous system, if we wish to understand it. To describe its symptoms without reference to the syphilitic form of epilepsy, of paralysis, and neuralgia, would be a mistake in every respect. Dr. Reade, of Belfast, and Dr. Todd, of London, were the first in this country to direct special attention to the occurrence of mania as a direct result of syphilis.

\* To prevent mistakes, it may be mentioned that this lecture was written entirely by Dr. Clouston.—T. S. C.

† Jo. Ment. Sci., Jan., 1873.

They both showed that it was one of a train of symptoms that had the specific infection for its starting point; that those symptoms proved clearly that the nervous system, both spinal cord and brain, as well as their membranes, were involved in such cases, and that whatever cured the syphilis cured the neuroses. Dr. Duncan published three very interesting cases of syphilitic insanity in 1863.\* Dr. Hugh Grainger Stewart published three cases in 1870.† Dr. Wille has collated the symptoms of 77 cases of syphilis, in which there were mental symptoms of one kind or other. Many of Lancereaux's cases, given in his work on syphilis, have mental impairment or disturbance as a part of their history.

Those cases vary much in their history and symptoms, but they have certain points in common that enable us to form a picture of a typical case of syphilitic insanity.

Such a patient has had constitutional syphilis, and has suffered more severely than usual from the headaches, aggravated at night, that characterise the disease. Those headaches are increased by pressure, are deeply seated, and may be felt either in the frontal or occipital regions. He usually has pains in the neck, and a general hyperæsthetic condition of the nerves. Sleeplessness then occurs, sometimes from the severe pains, sometimes as an independent symptom. At this stage there are often motor and sensory disturbances, such as slight paralysis of the face, eye, or extremities, spasmodic disturbances, epileptiform attacks, giddiness, local anæsthesia, disturbances of co-ordination, and loss of sight or hearing. The first purely mental symptom that makes its appearance—and it is almost invariable in all the cases of syphilitic insanity—is depression of mind, and hypochondriacal fears. The patient has a morbid fear as to the effects of the syphilitic infection; he thinks he is going to die, and there is a loss of energy and originating power of mind. Lancereaux calls this a syphilitic neurosis of the intelligence. This depression of mind may continue for some time, and then pass away, having been the only mental symptom present, especially if the syphilis is cured; in other cases it remains, and other psychological affections appear. The patient begins to lose his memory, and his mind gets impaired generally, the mental condition gradually getting worse, and passing into a deep dementia, without the occurrence of any other symptom. This was the course of the disease in 34 of Dr. Wille's 77

\* Brit. Med. Jo.

† Dublin Qu. Jo. of Med. Sci., 1863.

cases. In other six this steady downward course of the patient was broken by attacks of maniacal, melancholic, or delirious violence. The rapidly progressive mental weakening is very often associated with progressive motor paralysis of the extremities. Some such cases in their physical and mental symptoms simulate general paralysis very closely, but the previous occurrence of the constitutional symptoms of syphilis, the absence of delusions of grandeur, the usual youth of the patient, and, above all, to the practised eye, the absence of the true general paralytic want of co-ordination of the muscles, sufficiently distinguish the two diseases. After the dementia has existed for some time the case may be regarded as hopeless, and the prospects of the patient's living long are fortunately small.

Such is a typical form of the malady, but who that knows the protean symptoms of constitutional syphilis would expect all the cases of syphilitic insanity to be alike? Before they reach the goal of confirmed dementia, whither they all strongly tend, and where nine out of ten that have not been cured in the early stage terminate very quickly, the minority, as they run their course, exhibit a wondrous variety of symptoms.

In certain cases, as pointed out by Griesinger, where there is pre-existing disease of the brain, where there have been previous attacks of insanity, or where there is a strong hereditary predisposition to nervous diseases, an attack of syphilitic insanity may break out within two weeks after infection, being contemporaneous with the first secondary symptoms, or it may even precede them. In such cases the preliminary hypochondriacal mental symptoms scarcely appear at all, but the patient at once passes into a state of acute delirium or maniacal fury. Such cases are not so uniform as the others, sometimes the mania alternating with melancholia, sometimes disappearing for a time, the patient appearing to be quite well, or lastly, assuming the type of ordinary idiopathic insanity. Dr. Hugh Grainger Stewart's cases were of this kind, and he points out that they all had the following points in common—1. The character of their delusions (that they are the victims of conspiracy, persecution, and spiritual influence). One of them imagined that he underwent a kind of nightly torture called by him the "Cylinder finish;" another said that most ingenious machines were introduced into her brain to torture her; the third that people shot vitriol, ammonia, and "black poison" at him all night, to avoid which he

wedged his bedroom door, covered the key-holes with blankets, stuffed his ears and nostrils with cotton wool, and his mouth with a pocket handkerchief, all these defensive measures against his imaginary bombardment taking him an hour to carry out before he went to bed. I have under my own care just now a woman who had led a dissipated life, and had syphilis, who imagines that she is put into a "stove" by night, is tortured, her head beaten, and her person ravished until she is nearly dead.

2. The second symptom they all had in common was that they were suicidal and dangerous to others. 3. The next was that they all had hallucinations of the senses, and were all much worse at night. 4. The last symptom was that they all suffered much from cephalalgia of the syphilitic kind.

Such cases are very hopeless from the beginning. We may call them cases of syphilitic insanity engrafted on an original insane neurosis in the patient.

The next striking variety of Syphilitic insanity is where it follows distinct syphilitic epilepsy or apoplectiform attacks, and in this way partakes of the character of the ordinary epileptic insanity. Two of Dr. Duncan's cases were of this character.\*

The last variety I shall refer to is that where there are delusions of grandeur at first, and progressive paralysis afterwards; cases in fact where the symptoms are almost identical with general paralysis. Several German writers, Meyer, Westphal, Oedmansson, and Griesinger, have specially studied this kind of case: and, while they do not altogether agree as to their conclusions, the weight of evidence is in favour of the view that those are cases of general paralysis, who, having previously had syphilis, have the character of their symptoms influenced by it to some extent, a casual relation only existing between the two diseases. That many

\* Since the above was written very characteristic cases of this variety of Syphilitic insanity have been published, by Mr. H. Hayes Newington and Dr. Batty Tuke., in the Jan. No. of the "Journal of Mental Science," pp. 555 and 560, and in the No. of the same Journal for July, 1874, p. 262 Dr. Batty Tuke gives an admirable description of the morbid appearances found after death in one of his cases, illustrated by lithographs. His paper is a most valuable and original one. Mr. Newington suggests that where the symptoms result from a gummatous tumour the insanity should be called "Syphilomatous."

In the same Journal, p. 564, Dr. Cadell relates a case of mental excitement occurring contemporaneously with the secondary symptoms of syphilis.

In the April No. for 1874, Dr. Wilks relates cases of this disease, and in the Jan. No. for 1875, Dr. Hughlings Jackson gives cases of nervous symptoms in congenital syphilis.

more general paralytics are not so affected seems the only surprising thing, for their disease in many cases has undoubtedly been caused by excessive venery.

The most careful attempts have been made by the German physicians to elucidate the pathology of syphilitic mental disease, and to connect the mental disturbances present with the pathological changes found in the brain after death. Very much has been done to make us certain in regard to some points, but the whole matter has not yet been settled. Pathologically four forms of syphilitic disturbance of the brain have been made out:—1. Nodes formed on the internal surface of the skull pressing on and setting up irritation of the brain substance. 2. Gummatous tumours of the brain and its meninges, most commonly the latter. These two forms seem to be very constantly associated with the epileptiform kind of syphilitic insanity. 3. Meningitis affecting the cortical substance of the brain secondarily, the general result being a sort of gluing of the membranes to the convolutions to each other and to the skull. This is usually associated with the typical syphilitic insanity with its initiatory cephalalgia and hypochondriasis, its gradual loss of mental power, its disturbances of motion and sensation in the cerebral nerves, and its terminal dementia and paralysis. The fourth pathological species of syphilitic insanity said to exist is a purely hypothetical one. It is described as the irritative form, from cerebral anæmia, and the irritant effect of the virus on the central nervous system. In other words, cases where nothing at all can be found after death are so classed. Such are the cases of acute syphilitic insanity following the infection very soon, and associated with the insane neurosis. The important thing which may be regarded as quite certain is, that a form of insanity may occur as the result of the syphilitic virus, which shows no post mortem appearances in the brain after the death of the patient. In some few cases, while no trace of the disease is found in the brain, yet gummatous deposits, or caries of the bones, or nodes, are found in other parts.\*

\* A fifth pathological state as definite as the first three, and one which will probably be found to be associated with them all when looked for microscopically, is the thickening of the coats of the small cerebral vessels by the depositions of concentric rings of plasma, thus producing a gradual diminution of the calibre of the vessels, a diminished blood supply, and subsequent softening of the brain substance and apoplexies, described by Dr. Tuke in this Journal for Oct., 1874, p. 352. This condition had been indicated by German syphilographers, but not described and figured as fully as Dr. Tuke has done.

In a conversation I had with the late Dr. Skae, about syphilitic insanity, with reference to this course of lectures, he told me that the form of syphilis connected with condylomatous tumours, which he was the first to show was innoculable when he was one of the surgeons to the Lock Hospital, he believed to be specially prone to be connected with insanity. These condylomatous tumours are found chiefly on the mucus membranes, causing the huskiness of voice so universal in prostitutes, but the virus also seems to show a special affinity for the central nervous system, thus causing a form of syphilitic insanity.

Westphal states that there is a marked pathologico-anatomical distinction between syphilitic paralysis and general paralysis. Not to speak of the caries of the bones of the skull, so often found in syphilis, or the specific gummatous tumours and gluey inflammation of the membranes, he says that the products of the morbid changes in the arachnoid are cellular in the syphilitic cases, and fibrous in the general paralytic, and that the adherence of the pia mater *alone* to the cortical substance, which is almost always found in the latter disease, is never found in the former.

The prognosis in syphilitic insanity is generally unfavourable, though in cases where the poison seems merely to have acted as the match to set in a blaze an already smouldering fire of latent insanity, it is more favourable. But when convulsions, paralysis of single nerves, and local anæsthesia have appeared the prospect of recovery for the patient is very bad, and when progressive paralysis and advancing dementia have set in, the case is almost hopeless. There is this to be always kept in mind, however, that the most desperate cases have recovered, or got partially better. In all cases relapses are to be anticipated for some time.

Before leaving the subject of syphilitic insanity, I shall refer to a counterfeit or pseudo variety of it, which Dr. Skae specially alluded to in the conversation I have mentioned, and which I find also described by Dr. Wille. Cases of this kind are often as common as the real disease. The following is one of them.

A gentleman admitted into Morningside Asylum said he had had syphilis, that he must die, was depressed, and apparently hypochondriacal, refused to take food, and said he would infect anyone with whom he came in contact. There was no evidence of syphilis to be found on any part of his body. He had enlarged tonsils, but this did not

appear to be specific. He continued a long time most miserable, assuring the medical attendant that he was suffering from "the disease;" that he had it in all his bones, that it was killing him fast. So far as could be made out from his relatives, he had never had any venereal disease, more than perhaps gonorrhœa.

In such cases, the whole idea about syphilis is a mere delusion, and is usually only one part of the delusional insanity under which the patient labours.

*Delirium Tremens.*—I shall not take up your time in describing this well-known neurosis. It may, perhaps, be thought a misnomer to call it a form of insanity, but it is so clearly allied to Dr. Skae's other groups that I think he was quite right to include it. It would be a mistake to confine the varieties of insanity in any classification to those patients who have only mental symptoms, or require to be sent to lunatic asylums. This would be specialism carried into medical nosology. Rather every student of insanity should specially devote attention to those varieties of nervous affection that combine bodily symptoms with the mental. Looked at from a psychical point of view, *Delirium Tremens* may be said to be a malady caused by alcohol in virtue of its special chemical affinity for the nervous tissue, in which there are great mental excitement, terror, and confusion, sleeplessness, hallucinations of vision, having in addition motor symptoms partially involuntary, partial paralysis of certain nerves and ganglia, notably those regulating the heart's action. There is one mental symptom of much importance, that frequently occurs at the commencement of *delirium tremens*, the non-observance of which is apt to prove fatal to the patient, and that is the suicidal impulse. This is part of the fear, and the "thousand miseries" to which the patient is a prey, but is so apt to exist before the other symptoms of the disease have been fully developed that it is not thought of or guarded against as it should be. Of the two thousand suicides that occur in this country in a year, a very large proportion indeed must be due to this cause. This fact is much lost sight of by systematic writers on the disease. *Delirium tremens* is one of the fields on which those who devote themselves to the treatment of mental diseases and the ordinary physician meet, and a correct idea of it is not obtained except when looked at from both points of view.

There is a variety of true insanity that is very apt to follow an attack of delirium tremens, the one running into the other, that is not alluded to by systematic writers on the subject. When the motor and acute mental symptoms have passed off, the patient is found to labour under confusion of mind with suspicions, and often with hallucinations of hearing. This I consider a most critical stage in the disease whenever it occurs. It is most apt to be seen in cases who have a hereditary tendency to insanity, or in those who have had very many previous attacks of this disease. It is always a very anxious stage of the disease for the medical attendant, and is not without danger to the patient, suicide being frequently committed. The prognosis is in most cases good if proper treatment is adopted, and the points of the greatest importance in such cases is to get the patient out of bed whenever the suspicions appear, to stop any sedative or hypnotic medicines he may be getting, to have him walk much in the open air, or to send him for a change of scene under the charge of a trustworthy attendant or companion, and on no account think of sending him to an asylum. The mistake most apt to be committed by the family practitioner is to persist in keeping such cases in bed, while the specialist is apt to err in pronouncing such symptoms as true insanity requiring asylum treatment. The symptoms most apt to persist, and if so to affect the favourable prognosis, are the hallucinations of hearing.

*The Insanity of Alcoholism.*—This is, as you are all aware, a slow and chronic form of Delirium Tremens. As Trousseau says, “The mental phenomena are the same—they develop themselves more slowly, but their change of type is only apparent. Slacken the tumultuous pace of the fancies which jostle and caper in the maniac’s brain, and although you do not thereby effect any essential modification, you will completely alter the aspect of his delirium. For the disgust, the repugnance at food which characterize febrile anorexia, substitute passive indifference, absence of appetite—the gastric state of chronic alcoholism. In place of disturbance of vision, or the changing hallucinations of delirium tremens, there are confused perceptions, *muscæ volitantes*, cloudiness, fogginess, and transient flashes of false light.” An attack of chronic alcoholism is ushered in by the same sleeplessness and motor restlessness as one of delirium tremens, and Dr. Anstie thinks this “motor disturbance is independent of the

peculiar mental restlessness.” The disease is, as a general rule, easily distinguished, and is a very definite pathological entity both in its symptoms, causes, and course. It is a very curable disease at first, but as most commonly happens, when cured, the cause is soon at work again, and a relapse is the result. After a patient has had many attacks, there are certain mental, moral, motor, and sensory changes that take place, all running hand in hand, and abundantly proving the complete solidarity of the psychical and somatic functions of the nervous system. The intellectual power becomes weakened, they begin to exhibit many of the moral perversions and weaknesses, such as cowardice and untruthfulness, which I shall presently describe as characteristic of the dipsomaniac; the motor deficiency is shown by the muscular unsteadiness and trembling which become permanent, though aggravated during the acute outbursts, and there is a sensory paralysis of the limbs. All these things show degeneration of the nerve structure, from chronic poisoning, and excessive stimulation. Last of all a state of dementia is reached, the goal of all insanities, and that of alcoholism is in no way distinguishable psychologically from the profound dementia of other forms of mental disease. The motor and sensory complications alone mark its original form.\*

*Dipsomania.*—This is a form of insanity that may conveniently be treated of at this point, though not nearly allied pathologically to alcoholism. Dr. Skae held very decided views as to the existence and well-marked character of this disease, and his opinions were the result of very much practical experience in the treatment of such cases. While he had no doubt that many persons labour under a true neurotic disease, the chief symptom of which is an intense craving for alcoholic drinks which they cannot control, a disease which presents all the characters of other brain diseases in being frequently periodic, in its damaging and weakening effect on all the functions of the brain when of long duration, in its being very commonly a hereditary affection, some of

\* In the “Edin. Med. Journ.,” for Dec., 1874, Mr. Hayes Newington, in one of “The Royal Edin. Asylum Papers,” describes a kind of alcoholic mania of short duration, occurring as the result of alcoholic poisoning in a brain hereditarily predisposed to insanity, and very easily upset in its functions by a small quantity of the poison that would not be enough to cause delirium tremens. The brain gives way, in fact, from inherent weakness, before the latter disease has time to come on. The brain weakness is shown by the small amount of self-control, and the early tendencies to vice always shown by such cases. To this kind of brain disturbance he would limit the term “*Mania à Potu.*”

the ancestors and relations of the patients having the same disease, or suffering from other nervous affections, and lastly in its being frequently the result of physical causes that are also common causes of brain diseases, such as blows on the head—while he held this opinion strongly, yet he was by no means extreme or irrational in holding that all habitual drunkards are dipsomaniacs, or that it is always easy to distinguish between the two things. Last year Dr. Skae expressed his views in a very full and definite way before Mr. Dalrymple's Committee of the House of Commons, on his Habitual Drunkards' Bill. I think I cannot do better than give you an abstract of this evidence, the notes of which I drew up for him at his dictation the night before he went to London to be examined. He said, "I think there is a great variety among drunkards. First of all there is the regular drunkard who keeps sober during the day and gets drunk at night; attending to his business regularly. Such men may carry on for many years without injury to themselves or others. I have known one case where a gentleman was carried to bed drunk every night for 50 years, and yet he made a large fortune, and was in the market every morning attending to his business. I do not think that these are cases requiring any interference. The next class I would call the tipplers, who take small glasses of whisky or spirits of some sort, or ale or beer at intervals during the whole day." "Another class are what we call dipsomaniacs, or I would rather call it moral insanity, of which the drinking is one of the principal features. Those persons lose all control over themselves, and drink to any extent possible; in fact, they will drink anything they can get hold of, and if they cannot get spirits they will drink hair wash, or anything of a stimulating kind. Some of these cases are periodic, and come on at long intervals of time, perhaps two or three years; others come on at short intervals of time, perhaps every month or three months; those persons keep well for a few months, and then take ill again, when they lose all self-control. These cases are mostly hereditary, though very often caused by disease, by blows on the head, sometimes by hæmorrhage and the loss of a large quantity of blood, sometimes by disease of the brain. All these cases I mention to show that this is really a disease, and not mere cases of drunkenness. I think that these persons ought certainly to be restrained for a considerable length of time, in the hope of curing them of this craving. Then there is another form of

insanity brought on by drinking, namely delirium tremens: that is a form of delirium rather than insanity.” “Then, besides these, there are forms of insanity (with a craving for drinking) characterised by delusions, for example, hallucinations of hearing and seeing. These, I think, are truly insane, and have distinct delusions; they are very often suspicious of their friends, and are dangerous to be at large. I think that these are the principal forms which I have noted.” “I have known a lady (who laboured under true dipsomania) drink shoe black and turpentine. There are other symptoms of insanity besides the mere drinking. Such persons are entirely given to lying. You cannot believe a word they say when under the influence of the drink-craving, and they very often entertain a dislike to their friends which makes them dangerous. I have a gentleman under my care just now, who has been well for three years, but when he is ill he hates his wife and he hates his own life.”

Such is the variety of insanity denominated dipsomania in the table. In regard to its frequency as compared with other forms of insanity, I find that in the first thousand cases admitted into the Carlisle Asylum, there were 50 of this disease, or about 5 per cent. Its curability is, I fear, very slight; or, at all events, it is most apt to relapse.

Before I leave those varieties of insanity that result from poisons introduced into the blood (the syphilitic forms, delirium tremens, and insanity of alcoholism), I may mention two other very curious and interesting forms, not mentioned in the table, that result in the same way. Happily neither the one nor the other is met with in this country. Griesinger describes the cases of young men in a malarious district who suffered from attacks of insanity coming on in the one case every other day, and in the other every fourth day, both being cured by quinine. This was clearly a *Malarious Insanity*; in the one case being tertian and in the other quartan. The symptoms were acute delirious excitement, with delusions, coming on suddenly and accompanied by quick strong pulse and heat of head.”

*Pellagrous Insanity.*—In certain parts of France, and much more in certain parts of Italy, a disease known as Pellagra is common. It is caused by the use of diseased Indian corn as an article of diet. The mental phenomena, which are part of the complete evolution of this disease, “are very interesting in themselves, and still more important as contributing

another instance to the comparison of insanity with other diseases which is such a promising branch of study.”\* Prof. Lombroso has fully described the “Pellagrous Insanity” that is part of this disease in certain cases. He says it is characterised by “greater moral impressionability. A slight insult, the threatening of some trivial danger, completely carries them away, although they, perhaps, appeared before to be of sound mind. For example, a woman believes herself to be lost because she has missed mass; another person is in despair and goes mad because he has lent a pistol to a friend who will not return it. A woman hears her companions laughing at her dress, and becomes insane from grief; another, merely because her husband, a fisherman, is a few minutes late, breaks out into violent mania.” “A real or apparent stupidity, an obstinate mutism”—called by Lombroso “a psychical catalepsy”—is common. A most curious symptom of pellagrous insanity, and one said to be the most characteristic of all, is what is called by the Italian physicians “Hydromania.” “In one set of cases water is sought or desired on account of its coldness, in another set from its shining surface, the latter set being equally fond of the sight of fire, and will burn furniture to see the blaze. A third set of such patients have a profound dislike for the sight or touch of water on account of the vertigo it instantly produces in them. The symptoms are intermittent, being most common in the colder months. After death distinct pathological lesions are found in the brain. The most wonderful thing of all about pellagra and its insanity is that it is only curable by arsenic, and no other remedy, and that its recurrence is preventible by first steeping the diseased grain in lime, and then subjecting it to heat.

*Post-Febrile Insanity.*—The next form of insanity I shall refer to is that called by Dr. Skae post-febrile insanity. The exhaustion of the vital powers that is caused by zymotic diseases sometimes takes special effect on the higher functions of the brain, and we have an attack of insanity resulting. The nervous affections that often follow fevers in children are well known. These, no doubt, are precisely analagous to the post-febrile insanity of the adult. That insanity which sometimes followed fevers was known from the earliest times, and was evidently much more common two hundred years ago than now, but it was then ascribed not to the exhausting effects of the

\* Dr. Gasquet, “Journ. Ment. Sci.,” January, 1872.

fever, but to its not having been treated with "sufficient dilution" and purges to carry off the entire *materies morbi*, thus leaving a dangerous element in the system that was liable to fly to the head, and cause insanity. Arnold thought that insanity was much less common in his time than in Sydenham's after fevers and agues, because they purged more than the older physicians, and used the Peruvian bark more freely. Post-febrile insanity is not specially confined to one kind of fever. I have gone over the records of over a thousand cases of insanity that were sent to the Carlisle Asylum, and I find that among those there have been ten cases of such post-febrile insanity, four of which followed scarlet fever, two small-pox, one typhus, one typhoid, one intermittent, and in the tenth case I could not ascertain the exact form. Those are small numbers to determine the statistics of a disease, but I am not aware of any fuller statistics on the subject. I think those numbers represent in a general way the comparative frequency of its occurrence after the different fevers. Scarlatina is unquestionably the most frequent cause, and small-pox the next. It is said to follow typhus more frequently than typhoid, and as intermittent fever is now unknown in this country, this is a very rare cause of the disease. Whether this represents the comparative exhausting powers of the poisons of those fevers on the brain, or whether scarlatina is at the head from its greater frequency, or from its more common occurrence in youth when the brain has not attained its maturity, I am unable to say with certainty. The form of insanity that results after scarlatina is almost always characterised by symptoms of dementia which is incurable. We might expect this from the well known occurrence of idiocy and epilepsy in children after this disease of sequelæ and complications. More frequently than after any other fever we hear the remark, "Such a person has never been the same since he had scarlet fever." On the whole I think there is fair ground for the assumption that the poison of this disease is more apt to leave permanent brain disease than any of the others. When mental symptoms follow the disappearance of scarlatina they do so at once; the patient not having an attack of acute excitement so commonly as that he is left after the disease in a state of partial dementia. The weakness of mind is not complete, but more of a partial imbecility, a blunting of all the mental faculties and affections, with attacks of sub-acute excitement and irritability. In

two of my four cases there was deafness along with the imbecility, showing that the effects of the disease had not been confined to the brain convolutions, but had also affected the centres of special sensation.

The form of insanity that follows small-pox is of the same character as that of scarlatina, but is even more incurable. That of typhus and typhoid is more clearly the result of brain exhaustion from those diseases when they have continued for a long time. The patient seems to come out of the fever, showing no particular symptom of weakness of mind or insanity until some weeks afterwards, when he takes an attack of acute excitement, or "gets into a low way," and a long continued intractable depression results. Tuke and Bucknill and Maudsley say that the insanity that follows typhus is of a more incurable kind than that resulting from typhoid. Sydenham describes the form of insanity that used to follow ague, and in his time this seems not to have been uncommon. He calls it a peculiar form of mania, and says that the long continuance of the fever, and its being of a quartan type, seem to produce the mental symptoms more than any other circumstances. If treated by the exhibition of strong evacuants it degenerates into hopeless fatuity. My single case of the disease was that of a sailor who had regular attacks of ague, drank hard, lived on salt provisions during his voyage home, and on his arrival had an acute maniacal attack. He was thin, pale, and slightly scorbutic. I treated him with abundant diet, malt liquors, fresh air, quinine and iron, and a few draughts of chloral at bedtime, and he was quite well again in two months, having gained 20lbs. in weight in that time. In this case, of course, there were the other causes of brain exhaustion as well as the ague.

Of my ten cases only the last mentioned patient, and one of the scarlet fever cases, had acute symptoms of any sort, and they were the only ones who recovered. All the others were incurable, six of them being hopelessly demented, and the two others hopelessly melancholic. There was hereditary predisposition to insanity in only three of the ten cases.

Post-febrile insanity may be said, therefore, to be generally characterised by sub-acute symptoms, to result clearly from the brain being poisoned by zymotic poison and exhausted by fever, not to require a hereditary tendency for its development, and to be a most incurable form of insanity from the beginning.

While on the subject of fever and insanity, a very singular fact deserves notice. The delirium that so often accompanies all sorts of fevers and inflammations is wonderfully like the maniacal symptoms of many kinds of insanity, and unquestionably the general state of the brain cells must be much the same in the two conditions, yet I never knew an attack of inflammatory or feverish delirium to run on without an intermission into an attack of maniacal excitement, however predisposed the patient might be to insanity. How little do the mere general symptoms of a disease of the nervous system indicate to us its essential nature and true pathology!

*Insanity of Oxaluria and Phosphuria.*—All writers on the urine have noticed the hypochondriasis, depression of mind, want of energy and originating power, and the irritability that often go along with the presence of much oxalate of lime or phosphates in the urine. Dr. Prout thought that the mental state was probably the cause of those abnormal products in the urine, and he especially mentions “a nervous state of the system, and particularly mental anxiety or fear,” as causes that “will frequently produce in many people an excess of the salt in the urine.”\* Golding Bird says that “persons affected with ‘oxaluria’ are generally remarkably depressed in spirits, hypochondriacal, extremely nervous, painfully susceptible to external impressions, and in many cases labour under the impression that they are about to fall victims to consumption.” He says, in reference to phosphuria, that there are cases with this condition characterised by high nervous irritability, following injury to the spine. The late Dr. Begbie directed special attention to oxaluria as a cause of a nervous disorder which was characterised by a very highly neurotic condition of the patient. He says such patients are commonly in the prime of life, belong usually to the upper classes, and have indulged freely in the good things, especially the *sweets* of the table. He says their sufferings often threaten their mental condition. “They are usually peevish, sensitive, and irritable, or dull and desponding, and melancholic.” “They are not unfrequently hurried to the brink of mental derangement.” His theory of the causation of these miseries is that they “flow from the oxalic diathesis from a poison generated during the process of digestion and assimilation, carried into the blood by the

\* Prout, p. 176, 2nd ed. G. Bird, p. 250 and 307.

ordinary channels, but limited in its pernicious consequences by the busy agency of the urinary organs in separating it from the circulation, and discharging it from the system." Several of the cases he gives were certainly almost insane, but I fancy few such require asylum treatment. He shows that the nervous symptoms are apparently a result of the oxaluria, and disappear under the treatment that cures it. There is, on the other hand, no doubt of the fact that oxalates may be found in very great abundance in the urine of persons in good health. Lehmann, Bence Jones, and Garrod, and many others, direct special attention to this fact. The former, along with many other physicians, think that its appearance is not at all essentially connected with any special disease or train of symptoms. Speaking generally, the chemical physicians who have written on the urine take this view, while the clinical physicians take the opposite.

Dr. Skae held the opinion that there were certain cases of insanity with melancholic symptoms, directly dependent on the oxaluric and phosphuric conditions. They were usually men rather over the prime of life, who had exhausted their brain power by over work. They were frequently suicidal. The prognosis was very favourable in these cases.

Undoubtedly one of the strong arguments in favour of the view that such a variety of insanity exists, and one of the most certain means of saying that any particular case should be classed under it, is the fact that the treatment for oxaluria under which it disappears seems to cure the insanity also.

It may of course be said that we know so little of the real conditions associated with oxaluria that it is scarcely justifiable to assign it as a cause of any form of insanity. The conditions under which the oxaluria appears may be merely the symptom of some other disease of which the morbid psychosis is also a part, or it may be the *result* of the disordered brain condition instead of being its *cause*. I think probably Dr. Skae would have said, in answer to this, "Well, supposing this is so, yet if there is a characteristic and special form of mental disease in any way associated with oxaluria, and the knowledge of this fact will help us to understand its course, its prognosis, and its treatment better than we should have been able to do without this knowledge, then that is all I mean by calling it an insanity of oxaluria or phosphuria. It is the chief value of my system of classification that it is

bound by no principle, etiological or other, except that of enabling us to know something more about our cases than the old system, and classifying them in more natural groups.”\*

*Insanity of Bright's Disease.*—Though not mentioned on Dr. Skae's list, there is a variety of mental derangement, half delirium and half mania, which results from uræmic poisoning. I have met with two cases of this disease, and Dr. Grainger Stewart says he has also seen a case of this kind. It usually occurs in chronic cases of Bright's disease, with contracted kidneys, where there has been enlargement of the heart, and a tendency to dropsy for some time, and where the central nervous system has been long subjected to the influence of imperfectly purified blood. The symptoms present are mania of a delirious kind, with extreme restlessness, delusions as to the persons round the patient, an absolute want or fear of jumping through windows, or other actions that would kill or injure the patient. The symptoms are characterised by remissions, during which the patient is quiet, and rather composed in mind, but rational, and very prostrate in body. One of my cases was a man of 50, with a family history of insanity, who had once been much depressed in mind (but was not in an asylum) after a fever. He seems to have had heart disease for many years, and to have had Bright's disease for at least two or three years previous to his admission into the asylum. He had dropsy of his legs for some weeks before the mental symptoms began. He was at first morose and irritable to a morbid degree, and steadily got worse in mind, his symptoms changing to exaltation and excitement, fancying he could do wonders, had absurd schemes of making money, and threatened to murder everyone near him. On admission he was in a state of mental exaltation and excitement, gesticulating, saying he has been married, and had no children (which were delusions), and his memory quite gone. His speech was thick and indistinct, his tongue coated, his pupils dilated, and slowly sensitive to light, the reflex action

\* The following case has been kindly sent me by my friend Dr. Grainger Stewart:—"Wm. M., æt. 39, a light-house keeper, applied for advice at the Royal Infirmary, July 21st, 1871, complaining of lowness of spirits and want of appetite. His friends explained that his depression had been such as to compel him to give up his employment, that he had been jealous of his wife, and required constantly to be looked after. His urine contained oxalates. Ordered to be looked after, and to take 20 drops of nit. hyd. acid, dilute, three times a day. 31st, greatly better; no oxalates. Aug. 20th, quite well."

of the cord dulled, and temperature below normal; legs œdematous; his lungs were dull at bases, his heart hypertrophied, had a loud murmur with first and second sound; urine contained much albumen, and a few tube casts, sp. gr. 1020. This man alternated between this state of mind and that of a drowsy, stupid, but fairly rational condition, till two days before his death, when he got semi-comatose, with fits of delirium. He only lived five weeks after admission, or about two months from the appearance of his mental symptoms. This is a typical case of the disease. No doubt the mental cells of his brain were the weak point of his central nervous system from his hereditary predisposition to insanity, and the uræmic poison took effect there instead of causing convulsions.\*

*The Morbid Psychology of Criminals.* By DAVID NICOLSON, M.B., Medical Officer, Her Majesty's Convict Prison, Portsmouth.

(Continued from page 551, vol. xx.)

## II. STATES OF MENTAL DEPRESSION.

*Melancholy, including Hypochondriasis, Home-sickness, and Self-innocence as to Crime.*

We have seen that Simple mental weakness, the first form of weakmindedness, is neither more nor less than a want of mind, in some degree. In it the higher emotions are blunt, perception is dull, and all the processes are backward or sluggish.

In the States of depression which make up the second form of weakmindedness, the general condition of mind may be described as one of *inertia*, in the presence of a prominent activity in one direction. In well marked cases of morbid mental depression (not limiting ourselves just now to mere weakmindedness), the perceptive, intellectual, and reasoning faculties which are the normal belongings of the individual are made latent through torpidity of volition. The will is without energy; it is incapable of exertion; it cannot act; it is paralysed. This want of volitional power appears to be induced by an intense activity of self-consciousness, which

\* Since the above was written, Dr. Wilks has directed attention to "Mania as a symptom of Bright's Disease." *Jo. Ment. Sci.*, July, 1874, p. 243.

engrosses the attention of the individual, and ever directs his ideas to his own inner and personal relationships. Whatever may be the nature of the all-absorbing idea by which the mind becomes possessed, and however real or imaginary in its origin, a "mentally painful state" of depression, foreboding or sadness, is produced, against which the normal mental influence is found to be of little or no avail. In proportion as these states of mental pain disturb the usual relations between thought and action in the individual, or in proportion as they render him unfit for the necessary requirements of his position in life, whatever that may be, so far are they evidences of actual insanity, or of mere infirmity of mind such as we are dealing with under the term weakmindedness.

The possession which grief, anxiety, remorse, and such like influences take of anyone's mind is natural enough, so long as the person affected remains capable of offering a reasonable (if less active) response to those mental impressions from without, in accordance with which he is accustomed to regulate his conduct. But when, under given circumstances, the want of this response comes to alter the individuality, and give rise to behaviour more or less anomalous or absurd, then is there a morbid element introduced in the intense mental activity occasioned by the grief, shame, or other cause. This activity, which is limited in scope, is mostly emotional at the outset, may gain ground until some of the depressed states known as melancholy have been reached, and possibly at the expense, more or less, of reason and intelligence, which come to be involved in advanced cases.

The *occasion* for mental depression may be real, or it may be fanciful. If it is the latter, the indication is so much the worse, for it implies the origination of a delusive idea in the mind itself, and therefore some pre-existing disturbance of its functions. When the mental oppression supervening upon some real evil or distress goes on until a morbid state is produced, the process is similar to that wherein the mind, by persistently dwelling upon circumscribed or limited trains of thought, tends to magnify the proportions of the ideas, and to render them "fixed." In short, we have another illustration of the process connected with the growth of a delusion.

If the corrective virtue of imprisonment lies in the gloom, the solitude, and the forlornness of the prison atmosphere, it is but natural to expect that those submitted to such an influence would become gloomy, sad, and dejected, and that

altogether prison favours the morbid development of states of mental depression. This conclusion, however, is not the one to which my experience has led me, and it will be worth our while to make a brief inquiry into the bearings of the question. I have no wish, as I have no good reason, to deny that as a mere matter of sentiment prison life is all that is dismal, or to deny that a practical acquaintance with its contrasts and its restrictions is far from agreeable or inspiring. But a condition of things is readily imaginable where, so far as general comfort and freedom from worry and anxiety go, the favourable balance would fall with imprisonment. Taking it "under the circumstances," the large majority of imprisoned criminals show a tacit contentment with their lot—compulsory, this, to some extent, as they know it is no use grumbling, and they must get "through it" the best way they can. There are many who are by no means unhappy, and who contrive to make themselves tolerably comfortable in spite of their surroundings. Indeed, one prisoner at Portland told me he had not been so happy for a long time as he then was. A wretched home and drink together resulted in his blowing up the house with gunpowder, whereby a child was killed and other inhabitants injured. He tried at the time to cut his own throat, was tried, and sentenced to death, but got a reprieve. He had been leading a fearfully miserable existence.

No doubt the Mark Tapley spirit of contentment (enforced as it in a measure is) serves to ward off ill effects to which brooding and dejection give rise; but besides this, prisoners, especially those doing penal servitude at public works, have no time to dwell on themselves, and thereby get mopish and melancholy; for if they fall away from their work they lose marks, which means forfeiture of remission and longer detention in prison.

*Melancholy*, which is at once the prevailing form of, and the generic term for, states of mental depression, exists among imprisoned criminals, I believe, in proportion as the imprisonment is novel and startling, and as it involves social and moral fall and disgrace, and a severance from domestic comfort and happiness. Hence it is that it is rather the accidental or casual criminal than the habitual criminal who is liable to become despondent and melancholy. The convict who is torn from his family and friends for the first time for forgery, or other breach of trust, is unaccustomed to the wretched associations of prison life, and his unblunted

sensitiveness lends additional acuteness to the sense of degradation. He becomes a prey to his own imaginings, and there is a risk of healthy mental action becoming more or less swamped by a consciousness of guilt, a sense of shame, and a feeling of remorse.

The habitual criminal has become blunted to the operation of such influences as these, and he is not likely to give way to "dull care."

The earlier months of imprisonment (penal servitude) are more liable to induce depression of spirits for two reasons. The first is that the criminal has then the most vivid realisation of his change of circumstances, and this is possibly made more powerful by a sort of reaction from mental excitement produced in the course of trial regarding his chances of conviction, and by his hope of acquittal. The second reason lies in the fact that the first nine months of penal servitude consists (for reformatory purposes) of separate confinement, which is the most monotonous part of his sentence, and during which his thoughts are kept in a state of special tension by being actively engaged and concentrated upon *self*. We saw, when speaking of weakmindedness in relation to prison discipline, that during the earlier or separate confinement stage, mental depression was the most frequent cause for relaxation of the discipline, yet its relative frequency during this short period of special discipline is not sufficient to negative my opinion as to the absolute infrequency of states of mental depression among criminals doing penal servitude, especially if we take the whole term of imprisonment into account.

The character of the melancholy is usually simple; general mental apathy with, as it were, pain in one spot: and the body sympathises with the *inertia*. The patient cannot be roused to take an interest in his surroundings, or to follow out advice which would further his true self-interest. He is full of self-accusation, and ever harping upon the ruin and destitution he has brought upon himself and family, or upon the hardness of his lot. Such as these, whose notions are built up on actual circumstances, do not, I think, often go on to a state of positive insanity, although they may require a temporary suspension of discipline. Where the intellectual centres are touched, and where some delusion appears, the cases are apt to give much more trouble, by becoming irritable, suspicious, and determined. Under these circumstances the patient refuses food without assigning any

particular reason beyond that he “doesn’t want it,” or else on the ground that it is poisoned or drugged. The presence of an ultra-religious vein of thought is by no means uncommon. The patient has a “mission,” or a “power” has been given to him from on high. He feels himself to be pervaded by some abstract essence of good, and that his pulses throb with a mysterious potentiality which is denied to other men. They have a remarkable readiness in explaining or adapting passages of Scripture, according to their fancy for the moment, finding in those passages the irrefragable proof of their assertions regarding themselves or others. The graver cases of religious melancholy in criminals would appear, as Mr. Gover has suggested to me, to be secondary, and consequent upon a pre-existing stage of mania or excitement rather than the mere advanced development of slighter cases of melancholy and depression. In some of the slighter cases of weak-mindedness, where religious notions prevail, it will be found that although the individual is wrapped up in himself, he is usually calm and quiet, and resigned, but has alternations of tearful depression and exaltation from time to time.

How far does mental depression among convicts lead on to suicide? By far the largest proportion of suicidal attempts are *feigned* for the purpose of exciting sympathy, or as part of a scheme of simulated insanity. There is also a certain proportion of what may be called *frivolous* attempts. These are made in moments of vexation and disappointment and depression, and possess a certain amount of reality—reality, perhaps, of *wish* (that they could detach themselves from their misery), but not reality of intention (in the preparations they make). The attempts are not determined ones. The actual number of *suicides* among convicts cannot be said to be large, taking all the circumstances into account. I found\* that during the 15 years ending with 1870, 23 male convicts committed suicide out of an average annual population of 6,419; and in the same period only one female out of an average population of 1,132. I think it could be shown, judging from my own recollections, that foreigners, especially if they are ignorant of our language, would show a proportionately high ratio of mental depression with or without suicidal tendency. Thus, two Chinamen in 1855 tried to hang themselves in their cells at Pentonville. At the same prison in 1859, an Italian is reported by the medical officer as having

\* See a Paper on the Mortality among Prisoners, Brit. and For. Med. Chir. Review for July, 1872.

threatened suicide, and for some days refused food with a view of starving himself; and a Welshman "of low intellect, and ignorant of English, became sullen and depressed," and required a modified discipline. At Millbank, in 1856, a sullen and savage Portuguese succeeded in hanging himself. While I was Assistant Surgeon at Woking, a Frenchman nearly succeeded in putting an end to his life by hanging, in a fit of moodiness; and I have known a good many other foreigners to be overtaken by sadness and misery in consequence of their imprisonment. There may be something nostalgic mixed up in the feelings of depression in these cases.

I have said that, taking the whole period of penal servitude, my impression is that depression is not in itself a form of mental disturbance which in prisoners requires frequent interference on the part of the medical officer. But I would point out, what I believe to be the case, that mental depression may be, and is, the preliminary subjective experience of a good many prisoners, whose ultimate weakmindedness manifests itself in some other form, most probably in some of those conditions of exaltation which we shall have to consider. It may be that one might overlook a certain amount of dejection in a few prisoners, as only what one would expect, and therefore not requiring special notice in individuals; and for the same reasons prisoners who may, in fact, be low spirited, are not brought to the doctor's notice unless their condition seems to require it. It will readily be understood how a melancholy train of ideas intensifies itself, and works itself up (in the presence of an irksome discipline) through a channel of exaggeration (and even delusion), until a turbulent and excited phase of mind is reached, giving rise to noisy and violent conduct. When this happens, and the prisoner is brought before the medical officer, an intelligent warder will tell us that he has observed the prisoner for some time back to be peculiar in his manner, and that he has seen him crying repeatedly.

I come by chance upon the following case in the Convict Prison Blue Book for 1852 (p. 34), of a convict, W. Kelly, who had been a soldier, and sentenced to seven years' transportation for offering violence to his superior officer. He had been a drunkard. On the 17th January, says Mr. Bradley, the medical officer, "He was observed to be depressed in spirits. He stated that his sister had arrived from Ireland, and having failed to obtain permission to see him was

wandering round the prison walls shouting out his name: that during the stillness of the night he distinctly heard her voice. With the view of removing this hallucination the prisoner was at once placed to work in association, without avail. On the 12th of February, an attack of acute mania supervened, which, however, rapidly yielded to the treatment employed." (We are not favoured with the treatment pursued.) He was removed on the 14th of May to the Invalid Hulk "with the expectation that the change would expedite the cure," the case having doubtless assumed a chronic form although his conversation was much improved. This case illustrates well just such a sequence of mentally disturbed conditions as I have referred to.

The following cases show some of the phases under which states of mental depression show themselves:—

G.F. æt. 36, had occupied a respectable position in the Post Office; while serving his sentence of penal servitude at Portland, became depressed in spirits, and tried to hang himself in his cell. Dyspeptic and desponding. Wishes he "were out of this life as he has no chance now of doing any good, and his wife and family will be better if he were out of the way, for then people would help them." Sits and mopes the whole day, and will not be roused up. Invalided to Woking.

G. H. æt. 27, a scrofulous, pasty-faced prisoner with chronic bronchitis made an attempt to hang himself in a fit of wretchedness and sullenness, brought on more immediately by the annoyance he received from his fellow prisoners as he suffered from ozæna, which gave out a most offensive stench. Was very morose for a while, but improved under treatment in hospital.

G. R., in 1870, at Portland, was undergoing special prison punishment for misconduct. He had never shown any signs of mental weakness or derangement, but receiving a further punishment for misconduct, concurrently with his other restrictions, he became sullen and silent and obstinate. He persistently refused food for nine days, and lay in his cell heedless of everything. Required to be fed by artificial means. When spoken to and expostulated with he turned away and cried as if with passion. When he began to speak he said he spent a very wretched existence, and wished to get rid of it. Expressed sorrow for the trouble he had given me, and was willing to amend, and behave better for the future. He was detained in hospital for some time in order to get up his strength. Went on quietly for awhile, but he became possessed of the notion that he was kept in prison beyond his time, and that his papers were kept back from him by the governor. He became very excitable and violent, and had to be taken out of the ward where the other patients were

on account of the disturbance he made. He was ultimately removed as being of weak mind. In this case, noticeable mental depression preceded the excitement.

G. S. is now in this (Portsmouth) prison. I had known him as a troublesome character under another name at Portland during a former sentence. He obtained admission into hospital with an ulcerated condition of his left knee. I was satisfied that he created the sore himself in order to avoid work, and I told him so, and gave him the suitable treatment. The ulcer healed up, but the prisoner got into quite a low condition with great dejection, nervousness, and loss of appetite. The idea of being flogged for malingering had taken possession of his mind, and had thoroughly upset him. He confessed to me that it was so, and begged that I would "let him off this time," and he would never give me further trouble. After some further treatment he went out to work, and has gone on well.

J. S. æt 25. A case where religious depression began with mental excitement. In May, 1867, at Portland, I was sent for at midnight on one occasion to go and see this prisoner. I found him in a great state of excitement, and very noisy, as he had "seen the Devil in the form of a spirit," &c. After some weeks, during which he was more or less excited, he settled down into a state of religious monomania, declaring that the "Holy Ghost had nothing to do with the Trinity," and proving it from texts of Scripture in a way which was quite satisfactory to him. Answered general questions intelligently.

R. E. æt 46, a basket maker, was sentenced, in 1873, to 12 years for "wounding with intent to do grievous bodily harm." The following year, while at Brixton, he became the subject of religious delusion and melancholy. He is reported by Dr. Rendle, the Medical Officer of that prison, as having begun by "shouting while on his way to work that he was moved to do so by the presence of God," whom he had repeatedly seen in the form of fire. Was transferred to Millbank, where he told the Medical Officer that the Almighty had conferred upon him the power of barking like a dog. He was taken up with exhorting his fellow prisoners in the ward to "awake to righteousness." Has the Scripture-quoting faculty. It is important in such cases to keep in view any possible relation between his self-assertion, his depression, and occasional excitement, and the tendency to homicide which he showed in the crime he committed. It is so uncertain what impression may carry weight in a mind so full of commotion and so liable to sudden and emotional impulses.

A. H. W., a letter carrier, was convicted of stealing a post letter, and sentenced to 5 years' penal servitude. Towards the end of his sentence he became much depressed and moody. Has a most inanimate, and listless expression of face. Very anxious to get home. I saw this prisoner with the Medical Officer at Millbank, in the exercise yard, and he kept following us about, and was always found standing at our back when we stopped. With a bushy head of light hair, and

short beard and whiskers to correspond, pale face, and watery, red-like eyes, he put us forcibly in mind of a silly pet sheep. Looked as if he were given to masturbation.

I am indebted to Mr. Wilson, assistant surgeon at Woking Invalid Prison, for notes of the following case.

W. C. æt 23, sentenced to 20 years' penal servitude for "wounding with intent to murder." Had on a former occasion to find bail for threatening a female. It would appear that after committing the murderous assault, he tried to destroy himself by cutting his throat, and became low and depressed in mind. Suffered from noises in his head, was fitful, and restless nights with disturbed sleep, very lachrymose, and stated repeatedly that he could not conquer a desire to make away with himself. He required constant watching. Conversed rationally, but very liable to extreme mental depression, with frequent threats to commit suicide. After being detained at Millbank for some time he was sent to Parkhurst as being of weak mind.

The following brief notes of cases are from Mr. Bradley's reports (Blue Books) upon Pentonville Prison:—

G. R., suffered from gloomy ideas and suicidal impulses. He stated that previous to his reception into Pentonville he had attempted self-destruction, and that since that time the devil had haunted him for the purpose of driving him to the accomplishment of a suicidal act. Under suitable treatment in association, he became tolerably cheerful.

G. G., who used to fast on account of his sins, had visions of hell, had at times suicidal ideas; which rendered him unfit for separate confinement.

A. B., an ill-conditioned convict of low intellect, singed the hair off his head by means of his gas light, threatened suicide, and was depressed for some days.

*Hypochondriasis* is one of the subsidiary forms of mental depression which is met with now and again among prisoners. There are elements in prison life which would cause prisoners to become hypochondriacal more frequently than they do were it not that they are not usually of a nervous disposition, and that they are kept going at the spur of discipline. Were he to be given way to and taken into hospital the prison hypochondriac (like others) would only become worse. So long as he can be kept at work an opportunity is afforded of proving that his legion of bodily ailments are, at least, not so bad as he would like to make out. There is at present in this prison a Jew, M. L., who is just finishing a five years' sentence, and who is a typical illustration of the hypochon-

driac. He has been kept at the ordinary work, and it has proved as good treatment as any other he could have had. I have never been able to find anything the matter with him, although, according to his own unending tale, he is diseased from head to foot. He has petitioned the Secretary of State to look into his case; he has written to his friends ever so often that he is in a "deplorable" state; he has complained to the Governor, over and over again, that the doctor will do nothing for him. He declares it is past his comprehension how he can live; that he is dying day by day; and yet he goes to his work and does it, saying he doesn't want to shirk his work; he takes all his food, and has the appearance of being in the best of health. I shall not attempt to describe his symptoms. I cannot do better than give the statement of some of them, which he wrote out at my request, and which was limited only by the fact that the slate would hold no more. I give it *verbatim*:—

July 31st, 1874.

SIR,—According to your request, I humbly beg to state that I am suffering from a burning smarting in my flesh, and also a clammy discharging of my mouth, and soreness of my mouth and throat; and also I feel all over me the same sensation as when a person's foot is numb—a kind of prickly tingling; also the hair on me is the same as needles pricking my flesh. Sir, about eighteen months ago I felt it; my chest became very numb, and lasted two or three days, and when the numbing left I felt across my shoulders a prickly burning smarting, and in between my shoulders as if a hole was being bored with a hot instrument; and also both sides of chest I felt pain, and a few weeks after I felt a burning pain in my heart. Sir, I do not always feel so bad as I describe; some days I feel but little of it; it is according to the weather; when there is a change in the weather I feel hot about my face and eyes; pains across my loins, and so weak that my legs give from under me; it is then I suffer from what I describe, more or less. I also have pains in my head, and the nerves different parts of my body is of a work I always feel very weak.

Your humble servant,  
M. L.

In another prisoner, H. O., hypochondriasis appeared, complicated with delusions about his food being drugged, and the officers being down on him. He was in good health, and kept at work. I have heard nothing of him for months past. He makes his "just complaint" in the following terms:—

GENTLEMEN,—I have Been in this prison, portsmouth, 13 months, and I have been kept in torture and missery ever since I have been in The prison by having drugs put into rations to keep me in torture to try to make me commit myself, so that They get me flogged; because they could not do that they have burnt my body so bad that I cannot abair my clothes to touch my flesh; they dried all the nature out of my flesh I cannot bend myself about my body; smarts most Dreadful; they have only commenced that since the beging of last winter; they have baked me special bread with salt ptre in it; they give me that bread every 3 or 4 days; when I take it down to the principal (warder) they send me to the seperate cells, and report me for refusins labour, &c., &c.

*Home-Sickness* among prisoners shows itself mainly in two forms, viz., where the depression is connected with an intense anxiety and longing to get back to his home and friends, and also where wretchedness comes in a heavy cloud over the mind in consequence of desolateness, which he feels he has brought about at home. Thus the prisoner's home-sickness may or may not be selfish: he may long for a return to the enjoyment of home comforts or pleasures, or he may regret with bitterness the home-misery he has brought upon others. Of this unselfish form was the case of J. T., whose sentence to death had been reprieved. He felt for a time in an inconsolable condition. He had murdered one of his children, and all his thoughts were taken up about his wife and the rest of his family being left without anyone to look after them. He often cried and blamed himself for having caused such misery. At other times he would say that his sentence was too severe, and even that he never committed the crime. There are of course frequent cases where thoughts of home and friends occupy largely the prisoner's mind, but where they do not exert any unfavourable influence. Here they seem rather to act as a healthy stimulus to good behaviour and industry in order that by earning full privileges and proportionate remission of sentence, an earlier return home is gained. But on the other hand, these and kindred subjects of thought no doubt give rise to some of those morbid ideas which I have already pointed out when speaking of the special delusions of prisoners. The prisoner asserts, for instance, that some of his friends or relatives have come to visit him, and that they are walking outside the prison waiting to be admitted. He hears them continually speaking to him, and he pleads that he may be allowed to see them. Thus the prevailing idea in ordinary cases of melancholy may connect itself with such thoughts.

*Self-innocence as to Crime.*—A larger number of prisoners than would be supposed declare that they are innocent of the crime with which they have been charged, and for which they have been sentenced. Some, possibly, have grounds for the assertion: they *may* have been altogether innocent, as cases do occur now and again in which a free pardon is granted to convicts in consequence of after-proof, or they may not have been guilty to the full of the charge which had been proven against them. In some cases, indeed, the memory may fail to recall the commission of a crime, as when the evil was done during intoxication. But usually there is a colouring or distortion of facts and circumstances in the imagination of the prisoner. The first approach to the line of thought which ends in assertions of this sort appears to lie in an extenuation (in their own minds) of their crime. To this are added the plausible arguments and proofs of innocence brought forward by the "Counsel for the defence." The prisoners worry themselves about being convicted on such evidence (possibly circumstantial) as was brought against them; they believe they had no right to be convicted on it; hence that their conviction was unwarranted and unjustifiable; and, if so, that they are suffering innocently. In such a groove as this are their thoughts liable to run, and as these ideas continue one-sided and unanswered the conclusions reached become more or less established. In not a few cases where the mind becomes disturbed does this innocence of theirs become the "burden of their lay," and as a result one of two conditions is apt to follow: the prisoner either becomes moping and depressed because he has been unjustly dealt with, or else he becomes defiant and insubordinate, as having done nothing for which he should be treated as a prisoner, and threatens to force his way out even with violence. When speaking of prison delusions we saw how one set of them arose out of ideas as to unjust conviction and sentence. Self-innocence as to crime is usually nothing more than the ruling idea by which the mental depression is brought about or characterised; but from the frequency of its occurrence it may fairly be claimed as a subsidiary form of melancholy in connection with morbid states of mind occurring among prisoners. The condition is more apt to appear among those who have been unused to a criminal life.

As bearing upon some of the points we have been considering, the two following extracts from statements made by prisoners will serve to illustrate the difficulty there is in arriving at any exact conclusion as to the state of mind in

the case of some criminals, W. S. makes the following statement:—

I was convicted on my own confession of the crime of incendiary (*sic.*), which confession I made while in a deranged state of mind, and at the time was not believed at first, and would not have been eventually but by the time came for my trial I was so far recovered, and they not being able to find out the true cause—or author—of the crime, I was considered as guilty, but I declare, as I would before the Eternal Judge of all, that I am innocent (*sic.*), entirely innocent, of the crime, and I am confident that if, as I humbly pray may be done, investigation is made, my innocence will be proved, as there was *and is* no evidence against me but my own words; it is not so much for what mitigation may be made me that I earnestly desire my innocence to be proved; for, besides that, I have done nearly six years out of seven, the period of my sentence. I am in such an imbecile state of mind that I am not fit and have no desire to be at large, but it is for the sake of my friends, who feel and consider the guilt of the crime the greatest affliction that could be inflicted upon them. Also, in 1869, I charged myself with the crime of murder, and although there is no evidence of my innocence, but that I afterwards denied it, or of my guilt, any more than in the crime of incendiary, yet there is no notice taken of it, *although* I am as guiltless of one as the other; if it is thought that I am not fit to be at large, I would willingly endure to be kept in confinement for the remainder of my life, if my innocence may but be proved, and made known.

This man was often very troublesome as a prisoner and even violent. He had a certain impertinent sort of taciturnity in his manner, but there was nothing of the imbecile about him. The other case shows a similar run of idea in an elderly prisoner, who had been convicted of a similar offence, arson, but whose conduct was good in every way. He had a quiet, subdued manner about him, and talked rationally and coherently on all subjects, with the exception of religion and Scripture. He was full of exaggerated and deluded ideas on the latter topics, for when he began with them there was no end to his talk. The following statement was made by J. K. :—

J. K., having now completed two years' imprisonment, again entreats the favour of a reconsideration of the circumstances connected with the crime for which I am sentenced to five years' penal servitude, assured that the great searcher of hearts will direct to a righteous decision, whereby the Law shall be honoured by a remission of my sentence, or in my retention to fulfil its demands. Having described already the principal facts which led to so heinous a crime, a repetition will be unnecessary, save that my previous obedience to the law, my selfaccusation, and the imbecility of mind, from which I had been suffering for months, are the only solicitations I have to

offer for merciful consideration (except one), which, although of the most painful nature, and with the utmost repugnance, I disclose; yet for the justification of those, my friends, who may have pleaded a remission of my sentence upon the ground of temporary insanity, and as a proof that my mind was reduced to the lowest state of wretchedness, I am constrained to discover that which, but for the intervention of a merciful God, must have proved my Eternal ruin. About two months previous to my apprehension, I took my only dear little daughter, whom I loved to excess, from London Bridge to Battersea Pier by steamboat, with the awful intention of drowning both myself and my child, but an invisible hand was near, Whose power alone is infinite to save. Oh, the depth of the riches, both of the Wisdom and the Love of God, how unsearchable are his judgment, and his ways past finding out. What shall I render unto Thee, O Lord, for such a mighty deliverance, for thou hast plucked me as a brand from the Eternal burning; Thou hast rescued my soul from the lowest Hell. Give me grace henceforth to devote the remnant of my days to thy service.

And so on for a foolscap page without returning to the subject in hand. These two independent statements show some strange coincidences in the circumstances of the cases, and in the train of thought which occupied the minds of the prisoners. Both were convicted of arson, both allude to self-accusation, both claim to be mentally weak, both refer to homicidal propensities (real or fanciful), and both plead the feelings of their friends, and request a re-consideration of their case on grounds of the vaguest description. Both prisoners continue to do the ordinary out-door prison work, and neither required to be exempted from discipline on mental grounds. The cases form a curious collateral psychological puzzle.

*(To be continued.)*

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*Notes in regard to the Prevalence of Insanity and other Nervous Diseases in China.* By GEORGE SHEARER, M.D., Liverpool.

The following rough notes are compiled chiefly from the reports of the various Mission Hospitals established throughout China, and the Health Returns of the Treaty Ports, published under the auspices of the Chinese Customs' Service. It is a very wide question, and our materials are scanty.

I am not aware of the existence of any institution in China of the nature of an asylum for the insane. Fatuous people are occasionally met with in out-of-the-way country

places, and cases of mania, when they occur, are treated with iron handcuffs and hempen rope, and tied up like wild beasts till the fit is over, or nature sinks under the strain. As Dr. Lockhart remarks, "The condition of the insane in a country like China, where there are no asylums, is truly pitiable." A certain, though I must believe an inconsiderable, number of cases of lunacy and insanity are seen year and year at each of the various Mission Hospitals throughout the Empire, and these have been in some instances of so striking a character as to have impressed the opinion on the minds of some physicians that *mental maladies* are not less prevalent amongst the Chinese than they are amongst Europeans. Undoubtedly suicides (mostly by opium) are notoriously frequent, and from causes (such as disappointed love, injured pride, sudden fear) deemed ridiculous amongst Europeans. Yet my impression is very strong that the proportion of cases requiring restraint, surveillance, and, generally speaking, the care of an asylum, is infinitely smaller than we find in any part of England or Scotland. The statistical notes which follow will, I think, bear me out in this statement:—*Diseases of the general nervous system are by no means infrequent amongst the Chinese, but cases of alienation of mind are comparatively few.* Of course, if we include cases of anæsthesia and leprosy under diseases of the nervous system, we shall increase the former class; and if we include the suicides or attempted suicides by opium-poisoning, drowning, &c., under the latter head, we shall swell the number of insane cases. I have so arranged them in the abstracts which follow, and yet the proportion will be found to fall far below what might be looked for in European communities. Two causes in chief operate towards this result.

1st.—*The Natural Character of the People.*

The Chinaman is naturally a smooth, placid, unmartial, steady, easy-going, unexcitable being, with a large share of common sense, and self-control, and philosophy "to bear the ills of life." The mass of the population is engaged in agricultural pursuits, and leads a life of arcadian peace and felicity. Amongst business men there is nothing like the same jealous competition and rivalry, sharp practice and under-selling, which occur amongst European merchants and tradesmen; trade prices being regulated by guilds and corporations. Nor is there the same "living for appearances," and "beyond one's means," so common in England. The

style of living even on the part of wealthy merchants is simple and unpretentious, so that when calamity overtakes them the fall from the pinnacle of fortune is much less precipitous and injurious to one's pride and self-respect than it would be with us.

He that is low need fear no fall.

They do everything quietly and methodically, without the slightest exertion or fuss. They have few ups and downs in their world. Fate regulates everything, and they are content with their lot. If they have wealth, they use it; if none, they do without it. They live on in one regular routine. Worry is unknown. None of the causes, such as competition in business, speculation, religious controversy, and party politics, which in the west undermine health and increase the mortality, are found here. General indolence and ease, disinclination to be troubled about matters, and a desire to let things take their course, trusting that all will come right, are their characteristics. This state of feeling, partly inculcated by their various religions, and occasioned partly by the climate, conduces most effectively to the permanence of their institutions, and indisposes them for any changes in their customs.

*2nd.—Their Temperate and Abstemious Habits.*

The Chinese are a sober, temperate people. One physician writes—"During eight years' residence in Peking, I have seen but two cases of intoxication." Another, "During six years' residence in Hankow I have seen but two cases of intoxication and one of drunkard's liver." Another, "During seven years' connexion with a public hospital I saw but eight cases of intemperance." Yet a good deal of raw coarse spirits, or "shamshoo," is consumed, distilled from the Sorghum, or Barbadoes Millet, and containing a large quantity of fusel oil, which renders it impossible to be drunk in large quantities. Tea is the only beverage which is not used in *moderation*, and to this circumstance is attributed the general prevalence of dyspeptic and gastric disorders. A mild, native tobacco is commonly smoked by men and women by means of the water-pipe, and within the last forty years the opium-pipe has become the indispensable and baneful luxury of an enormous and growing proportion of the population. How far the habit of opium smoking tells in the development of mental

diseases I know not, but of all luxuries it is the surest destroyer of health, property, position, and life.

At the Shanghai General Hospital during the year 1855 there were 12,237 cases, surgical and medical, under treatment, of which 16 were entered under the heading paralysis, 20 of epilepsy, and 16 of attempted or successful suicide by opium. Proportion 1 to 235.

During the year 1854, at the same institution, 12,181 cases were treated, 20 of which were cases of paralysis, 15 of epilepsy, six of suicide by taking opium. Proportion 1 to 297.

In 1856 there were 11,495 cases entered, of which 10 were cases of paralysis, 16 of epilepsy; attempted suicide by the use of opium, 8; successful ditto, 4. Proportion 1 to 302.

During the year 1863, out of some 20,000 cases, there were but 14 of insanity, and this is stated by Dr. Henderson to be "more than double the number observed during the three preceding years. Insanity, though reckoned exceedingly rare amongst the Chinese," he goes on to say, "may not be really so, as we shall probably find on a better acquaintance with the people." In the majority of cases the friends ascribed the disease to the influence of sudden terror, as from fire, incursions of Imperialist soldiers, pirates or robbers, pecuniary losses, disappointment in love or marriage. Two were examples of *erotomania*; one was perfectly quiet and inoffensive, and left the hospital perfectly cured within three months; the other showed his disappointment by savagely attacking everyone who approached him. He was carried in by four men, heavily ironed with a chain weighing 4lbs. around his neck, and his hands and feet firmly tied together. He recovered within 42 days.

A maniac who had just attempted to commit suicide by drowning was brought to the hospital by two policemen, who found him a most troublesome subject to manage. He endeavoured to destroy everything within his reach, stripped himself naked, and was constantly vociferating at the pitch of his voice, day and night. He steadily refused all food and medicine, and was fed with the stomach pump for eight days, but in the end he died of exhaustion.

Another case of acute mania died of inanition.

A third, in a lad 18 years old, seemed due to injury about the head, received during a severe beating from his master, and was an extremely violent one. For seventy hours he never slept, nor ceased yelling, notwithstanding large doses,

frequently repeated, of tartar emetic and opium. Aphonia at last put an effectual stop to the uproar, and at the end of fifty days he was perfectly well.

Of the 14 cases of insanity, 11 were cases of acute mania, with excited pulse and obstinate insomnia, and three were cases of dementia.

The same year 44 cases of attempted suicide by opium were treated, of which 14 were fatal. Proportion 1 in 345.

In the year 1860 (total, 16,111), dementia, 6; epilepsy, 5; paralysis of face, 23; hemiplegia, 4; paraplegia, 13. Proportion 1 in 316.

During the year 1865 the entire number of cases amounted to 15,000; there were two cases of suicide by hanging, and 43 of attempted suicide by opium—34 being successfully treated and nine proving fatal. There were two cases also of acute mania. Proportion 1 to 319.

During the year 1870, Dr. Johnston reports a total of 12,823 cases, of which six were cases of insanity (one only remained uncured), 38 of epilepsy, 48 of paralysis, 31 of facial paralysis, and four of locomotor ataxy. Cases of poisoning with opium 48, of which 12 died; ditto with arsenic, 2: both recovered. Proportion 1 to 72.

During 1871, 22,496 general cases were treated, including one of paraplegia, ten of attempted suicides by swallowing opium, of which two were fatal, and one of suicidal melancholia, alternating with attacks of acute mania. Proportion 1 to 1607.

During 1867, 13,078 general cases were under treatment, of which five were cases of hemiplegia; 40 of epilepsy, four of mania, 24 of facial paralysis, four of cut throat, 44 of opium poisoning, of which ten died. Proportion 1 to 108.

During 1872, the total was 12,378, of which 12 were cases of epilepsy, 24 of hemiplegia, three of acute mania, and 38 of opium poisoning (all suicidal), of whom nine died. Proportion 1 to 160.

At Swatow Native Hospital there were treated during the years following :—

	General Cases.	Paralysis.	Epilepsy.	Insanity.	
1864	1967	7	—	1	Proportion 1 to 246
1865	1777	15	4	—	Proportion 1 to 90
1866	2500	11	9	2	Proportion 1 to 113
1867	3000	24	8	2	Proportion 1 to 90

At the Hankow Hospital of the Wesleyan Mission, Dr. Porter Smith reports that during the year 1864-5 he treated a total of 18,764 cases, of which 182 came under the denomination of diseases of the nervous system, as follows:—Epilepsy, 5; apoplexy, 2; paralysis, 60; neuralgia, 113; aphonia, 2. Proportion 1 to 103. He remarks—"Diseases of the nervous system are remarkably infrequent. How far this depends on the apathetic, peace-and-quietness loving character of the people, we cannot tell. In keeping with all their physics and philosophy, they certainly do not use their brains to any very wasting or wearing extent. Apoplexy is very rare. Palsy is generally hemiplegic, coming on in no very definite or sudden manner, and almost always recovered from to a considerable degree. Paraplegia, general paralysis, softening of the brain, and chorea have not been observed. Bell's paralysis of the face occurs with tolerable frequency. Dentition is easy amongst children, and seldom attended with convulsions, palsy, &c. Water on the brain is uncommon. Insanity has not been seen or heard of amongst persons applying for relief. Three cases of idiocy have been noted amongst children, and four instances of imbecility amongst adults. Considering the alarming character of mental maladies, on the one hand, and the exaggerated notions entertained by the Chinese of the powers of Western Art on the other, it is probable that if cases of insanity were numerous in proportion to other diseases and the population, they would be found in far greater numbers at the hospital."

During the year 1865-6 Dr. P. Smith treated 8,941 cases at the Mission Hospital, Hankow, of which 152 were classed under the head of diseases of the nervous system, as follows:—Apoplexy, 1; epilepsy, 25; paralysis, 44; neuralgia, 55; sciatica, 28. Proportion 1 in 59.

During the year 1866-7 Dr. Smith treated 11,557 cases at the hospital, of which 141 are referred to the class of diseases of the nervous system, as follows:—Apoplexy, 2; epilepsy, 28; paralysis, 36; hydrocephalus, 3; neuralgia, 49; sciatica, 20; facial paralysis, 3. Proportion 1 in 82.

During the year 1867-8 Dr. Smith treated at the hospital a total of 6,661 cases, of which no portion is classed under the head of diseases of the nervous system. Proportion nil.

During the year 1868-9 Dr. Smith treated in all 6,935 cases, of which 120 are referred to the nervous system. Thus:—Epilepsy, 14; infantile convulsions, 2; hemiplegia,

12; hydrocephalus, 2; facial palsy, 2; neuralgia, 69; sciatica, 14; insanity, 2. Proportion 1 in 58.

In the Native Hospital at Hankow, carried on by Dr. Shearer under the auspices of the London Mission, I find there were 5,668 cases under treatment during the year 1870, of which 165 cases are entered under the head of diseases of the nervous system as follows:—Neuralgia, 15; sciatica, 18; vertigo, 4; cephalalgia, 42; hemicrania, 16; trembling palsy, 2; facial paralysis, 7; head palsy, 1; hemiplegia, 11; paraplegia, 16; hæmorrhagic apoplexy, fatal, 1; epilepsy, 12. Two cases of insanity, and one of suicide by hanging, all of them originating in family quarrels. Proportion 1 in 35.

Dr. Thomson, of Swatow, reports 35 cases of diseases of the nervous system, out of 1500 cases of general disease treated in the Native Hospital, as follows:—Neuralgia, 17; sciatica, 8; hysteria, 1; paraplegia, 1; hemiplegia, 3; epilepsy, 4; œtitis, 1. Proportion 1 in 42.

At Kew-Kiang Hospital for the natives Dr. Shearer reports upon 2,456 general cases under treatment during the year 1871, of which 44 are referred to the nervous system. Among these were 2 of hæmorrhagic apoplexy, fatal within 6 hours; 1 of delirium tremens; 1 of numbness and partial paralysis of right arm and hand, with acute wasting of the muscles; 3 of convulsions in young children; and one of acute mania cured by repeated doses of bromide of potassium, after the ordinary sedatives had failed. Also several cases of opium poisoning with a view to suicide, saved by the administration of strychnia in minute and repeated doses. Proportion 1 in 46.

Dr. Manson, at the Dispensary for the Natives in Takoo and Taiwanfoo, Formosa, reports on 1287 cases, of which 7 only are classed under the head of diseases of the nervous system, as follows:—Hysteria, 1; neuralgia, 2; sciatica, 2; epilepsy, 2. Proportion 1 in 183.

Dr. Reid, in charge of the Mission Hospital at Hankow, for 1872, reports upon some 5138 cases, of which 120 are placed under the head of diseases of the nervous system, as follows:—Chronic hydrocephalus, 2; apoplexy, 2; embolism, 1; inflammation of spinal cord, 2; atrophy of spinal cord, 5; softening of spinal cord, 3; neuroma, 2; paraplegia, 7; hemiplegia, 19; facial paralysis, 5; Scrivener's palsy, 1; infantile paralysis, 10; tetanus, 1; convulsions, 10; epilepsy, 16; shaking palsy, 2; neuralgia, 6; sciatica, 8; hemicrania, 4. This is in the proportion of 1 in 42.

Dr. Manson, of Formosa, reports upon 891 cases treated by him during 1872, of which only 9 were referred to the nervous system:—Hysteria, 3; epilepsy, 1; sciatica, 1; paralysis, 4. Proportion 1 in 99.

During the year 1873, Dr. Reid treated some 3876 cases at the Mission Hospital in Hankow, of which 101 belonged to the class of nervous diseases, as follows:—Tubercular meningitis, 1; apoplexy, 3; sunstroke, 2; hemiplegia, 15; paraplegia, 5; infantile convulsions, 9; epilepsy, 12; neuralgia, 13; sciatica, 16; shaking palsy, 1; locomotor ataxy, 2; infantile paralysis, 5; Bell's paralysis, 4; Scrivener's palsy, 1; anæsthesia, 3; spasm of muscle, 4; mania, 1; idiocy, 2; neuroma, 2. This is in the proportion of 1 in 38.

The only reliable inferences to be drawn from these statistics seem to be the following:—*That disorders of the nervous system, in a general sense, are by no means infrequent amongst the Chinese; that we have no sufficient data as yet to enable us to decide the question of their greater or less frequency of occurrence, as compared with European countries, though the probabilities are that the prevalence of diseases of the general nervous system in China bears some proportion to the prevalence of the same diseases in Europe, and other regions, since the proportion is observed constantly to rise with the degree of attention paid to diagnosis, the proportion of nervous cases varying from 1 in 1607 to 1 in 38 at different hospitals; but that cases of alienation of mind, idiocy, lunacy, fatuity, and, generally speaking, insanity, are strikingly few, if we leave suicides out of the reckoning.*

Sunstroke, or heat apoplexy, which carried off 10 persons in the foreign community at Shanghai during the summer of 1872, is all but unknown amongst the Chinese.

In confirmation of these remarks, I find Dr. Lockhart, of the Pekin Hospital, who, during the year 1861-2 prescribed for some 22,144 cases, writing thus:—

“The number of cases of paralysis of various kinds has been very surprising, chiefly atonic paralysis, the result, in many cases, of excessive study, and of endeavouring to commit to memory the books of the classics; in some also the result doubtless of extreme dissipation. Other cases were clearly the result of effusion of serum, or the extravasation of blood on or into the brain, as in apoplexy. From all that could be ascertained, it would appear that disease of the brain and paralysis in its various forms prevail to a great extent in this city. I am satisfied that one cause of cerebral affections among the Chinese in the North is the practice of living and

sleeping in rooms heated by stoves in which anthracite coal is burned. These stoves have no chimney, and the coal being smokeless, leads the people to suppose that nothing injurious passes from the fire, but of course a large amount of carbonic acid and carbonic oxide is generated, and injuriously affects those exposed to it, causing severe headache, stupefaction, and fever. Many persons have been brought to me semi-comatose, who in the cold weather had lighted the stove and then gone to bed, but were afterwards found by their friends to be insensible. Such a state, often repeated, must give rise to cerebral disease sooner or later, and I am sure it does so in many instances.

“Amaurosis is also very common, the consequence of unremitting application to reading, and also of dissipation and excess. Many of the Buddhist and other priests are subject to this malady.

“*Insanity*.—Many cases of insanity and idiocy were seen, but they were for the most part quiet and easily controlled. In one case of acute mania, the young woman had been tightly bound with cords by the wrists till mortification set in, which, spreading up the arms, caused her death. The condition of the insane in a country like China, where there are no asylums, is truly pitiable. The unfortunate sufferers are usually bound fast, sadly neglected, and subject to hard and cruel treatment, in order to precipitate their death, which is *urgently desired* by their friends and relatives.

“Many epileptics were seen, and deaf mutes are from time to time brought to the Hospital.”

It is quite evident that no satisfactory conclusions can be drawn from the statistical method as applied to these returns, which, in most cases, are rather a simple record of the rough and ready treatment of a general hospital, by men engaged in private practice, than a careful analysis and classification of cases for scientific purposes. But it will be remarked that, whereas the proportion of nervous diseases to general maladies varies thus :—1 to 235, 1 to 297, 1 to 302, 1 to 345, 1 to 316, 1 to 319, 1 to 246, 1 to 103, 1 to 90 ; it is stated to be so rare in one hospital as 1 to 1607, and so frequent in others as 1 in 59, 1 in 58, 1 in 48, 1 in 42, and even 1 in 35. This enormous divergence can only be attributed to the greater nicety of diagnosis practised at some hospitals than others.

Still it may be interesting to compare with these returns of the native hospitals a few which I have by me of the maladies prevalent amongst foreign communities in China, from

which it will be seen that the percentage of nervous disorders is much greater, though, as a rule, the residents in our foreign settlements are young, hale and hearty—in fact, generally speaking, people in the prime of life. For this excess of nervous affections the climate is generally blamed. Dr. Scott, of Swatow, for 1870, reports upon 361 cases of general disease amongst the foreign population, of which 12 belong to the nervous class, or 1 in 30.

Dr. Somerville, of Foochow, returns a total of 496 cases for 1872, of which 19 were classed under the neuroses, or 1 in 26, as follows:—Heat apoplexy, 1; sun malaise, 13; tetanus, 1; sciatica, 1; neuralgia, 3.

Dr. Wong, of Canton, makes a return of 204 cases of disease amongst foreigners during 1872, of which 12 were nervous cases, or 1 in 17, thus:—Sunstroke, 2; neuralgia, 6; paraplegia, 1; cerebral exhaustion, 2; hysteria, 1.

Amongst the foreign community of Shanghai, numbering between 2000 and 3000 souls, during the half-year ending September, 1872, there took place in all 63 deaths, 16 of which, or nearly one-fourth, were from affections of the nervous system, as follows:—Disease of the brain, 1; heat apoplexy, 10; spinal arachnitis, 1; delirium tremens, 1; infantile convulsions, 3.

During the succeeding half-year (cool winter season), 50 deaths occurred, of which only 6, or  $\frac{1}{8}$ th were from affections of the mind and brain, thus:—Suicide, 1; brain disease, 4; epilepsy, 1.

*On the Family Care of the Insane in Scotland.* By PROFESSOR FRIEDRICH JOLLY, of Strasburg.\*

The treatment of the insane in families, and the system pursued at Gheel, are generally regarded as identical. The experiment which has been going on for centuries in the little Belgian town appears to satisfy all the requirements of a crucial experiment; and it is supposed that it furnishes in its results a demonstration of the worth or worthlessness of the family system of treatment. Friends and foes have long

\* It seldom happens that any portion of our lunacy administration is discussed in detail by foreign writers. As such discussions when they do take place ought to be specially valuable to the readers of this Journal, it has been thought a translation in full of this interesting paper would prove acceptable. The original appeared in *the Archiv. für Psychiatrie*, V Bd., 1 Heft, 1874.  
—TR.

been accustomed to investigate the matter at Gheel, and to found their respective verdicts on the system which they may have observed there.

As one glances over the copious literature which is devoted to the subject, it almost appears as if there was an ever increasing conviction in regard to at least one point, that the Gheelese system is suitable or desirable only in the country of its origin; and that there can be any considerable development of it in other places, which have not been prepared for it by centuries of usage, appears to be inconceivable.

Indeed, the imitations of the system which have been attempted in various parts of England and Germany have nowhere had any special success. In England these attempts have generally been given up, and the family treatment of the insane has neither there, nor with ourselves, been adopted to any great extent. The general belief has been that the experiment made in Scotland for carrying out the family system had no greater significance than the others; and it was prophesied that its fate also was to fall rapidly into oblivion. Even among the English members of the profession, though nearer than we are to the locality, the Scottish experiment is generally looked upon as nothing more than a personal whim of the Scottish Commissioners, and as having already within it the seeds of dissolution. An illustration in point will be found in the ironical remarks which the reviewer in the "Journal of Mental Science" makes on the Fourteenth Scottish Report when dealing with this question. (January, 1873, Vol. xviii., p. 549.)

In the summer of last year (1873), after a short visit previously made to Gheel, I arrived at Edinburgh, holding views very similar to these; but while there I found occasion to modify my ideas essentially. By the friendly services of Sir James Coxe, one of the Commissioners in Lunacy, I made an excursion, in company with an Inspector of Poor, to one of the lunatic colonies. This visit, and the information furnished by these gentlemen, as well as a more careful study of the Scottish Reports and their appendices, convinced me that it is no "Gheel in the North" with which we have to do, but an organisation which rests on a quite different and much sounder basis.

I may now give a short description of the "colony" which I visited. It was the village of Kennoway, situated in the upland which stretches to the north of the Firth of Forth, and easily reached from Edinburgh. It lies in a pleasant

neighbourhood, is of considerable size, and presents a moderately well-to-do appearance. Round about there are a number of scattered farm-houses, in which some of the patients are boarded, so that one has to make a tour of considerable extent to see them all. On the whole, however, the number, if regarded by the standard of Gheel, is but small. There are at present not more than 47 boarded in the whole village and neighbourhood. Of these there were 27 to whom we directed special attention; the others we saw only in passing and imperfectly. The 27 belong to the parish of Edinburgh, are boarded here at its expense, and are visited at least every quarter of a year by the inspector of the poor of that parish. Opportunities also occur for incidental visits, such as that in which I took part. It has also to be noted that, in addition to these inspections, there are also visits specially paid for and regularly made by a medical practitioner resident in the neighbourhood; and that at least one yearly visit must be made to the colony by a Commissioner in Lunacy, who has to make a detailed report upon it. A book is placed in every house for the purpose of recording in it the visits paid, and the observations made. A second book, containing the state of the account between the inspector of the poor and the guardian, gives information regarding the payments for board and other expenses which are incurred on behalf of the patients.

Most of the houses that we visited consisted merely of a ground floor and attics; a few only had a first story. On the ground floor there were, besides the kitchen, one or two other apartments, which were generally used both as sitting-rooms and bedrooms. In some houses there was a bed in the kitchen also. The beds, which were everywhere carefully inspected by my conductor, consisted invariably of palliasse, mattress, and bedclothes, and were, without exception, clean. There appeared to be no real difference between the bedding of the sane and the insane. I received the impression throughout that the patients enjoyed the same attentions and comfort as the families of their guardians. They eat at the same table, sleep, in many instances, in the same rooms, and move about with complete freedom in the houses and neighbourhood. It is precisely the same impression as was produced at Gheel in such houses as contained quiet and cleanly patients, and have there furnished so much cause for enthusiasm to the advocates of the family system. Some further information in regard to the Kennoway patients

will give an indication of the Scottish manner of selecting patients suited for family treatment.

Of the 27 patients only four were men. This preponderance of the female sex is also found, though not so markedly, in looking at the total number of patients under family care. There were, for instance, 645 men and 847 women, among 1,492 pauper lunatics who, according to the last Report, were so placed on 1st January, 1872. The male portion of these by no means belonged to the class of lunatics whose labour might be made profitable. Those, at least, whom I saw in Kennoway, were physically helpless imbeciles, who might, indeed, be got to do a little work, but more for the sake of providing them with occupation than to make them really useful. Generally the same state of matters exists in the other "colonies." The women whom we visited were sometimes engaged in knitting or sewing, or assisting in the house work; but very few gave the impression of being able to earn by their work any appreciable part of their maintenance. Another circumstance which struck me as remarkable and different from what is seen at Gheel, was the absence among the women of those belonging to the earlier periods of life. Only one was but of the age of 25 years; the next youngest was 34; the next 39; all the rest were over 40, and the greater number over 50 years of age. And this is not accidental but the result of a principle, which seems to be generally adopted in the selection of the patients. Females of child-bearing age are entrusted only to families who can furnish special guarantee of suitability. And there can be no doubt that in this manner a well-known danger connected with the system is, to a great extent, if not altogether, obviated. We shall, however, return to the discussion of this point.

The maximum number of patients that may be placed in one family has hitherto been fixed at four, though this number is only rarely reached. But the experience which has now been gained leads to the conviction that it is not desirable to board more than two patients in one family. In his last report on this subject, Dr. Sibbald expresses himself as follows—"What should be aimed at is, if possible, to merge the life of the insane inmates in that of the household. But when there are more than two such members, they overwhelm and destroy, instead of contributing to, the family life." And I received the same impression in the two houses in Kennoway, in which four female patients were boarded. The other

19 patients were distributed so that eight families had each two patients, and three families had each one patient boarded with them.

The forms of insanity exhibited by the patients I saw were exclusively imbecility and dementia; some cases were of the apathetic kind, and others were characterised by volubility and marked incoherence. But in every instance they were, as has been already stated, of a harmless and inoffensive character. Dirty patients, such as one meets at Gheel, were not to be found, and are generally excluded. The only patient who appeared to me to be an exception to this was one who habitually picked her clothing and scratched the plaster on the walls. It had, however, been already determined to replace her in the asylum, from which, indeed, she had been removed only by way of experiment. A few appeared to look back with regret to their residence in the lunatic wards of a poorhouse, where they had previously spent several years; but they had no complaint to make regarding their mode of life in their present homes, except their not being accustomed to it. But how would it be universally possible even by the realisation of the highest ideal of humanity to implant in mankind the feeling of contentment?

The relation subsisting between the guardians and their charges seemed to be of a pleasing character. It was generally the female guardian that I found at home; the men being for the most part employed out of doors. They seemed always to be on excellent terms with their charges, and willingly talked about their characteristics, and the way in which they came to a proper understanding with them. It still remains to give some details regarding the expense of maintenance in Kennoway before I attempt to make a critical comparison of the Scottish with other systems of administration. The amount which is paid weekly to a guardian ranges from five to six shillings. This includes board, lodging, and attendance only; the clothing is provided by the parish to which the patient is chargeable. And there are also to be added the expenses of the various visits of inspection, which cannot be exactly apportioned to individual cases.

It is evident from what has been said that the Scottish colonies (of which the one just described may be taken as a specimen, being neither one of the most luxurious nor one of the poorest) presents many points of resemblance to Gheel. This was, of course, only to be expected, since in both places lunatics are boarded with families by the local authorities.

Certain differences, indeed, we have already indicated. Thus it has been pointed out that the insane population are never crowded together to such an extent as in Gheel. There the little town and its neighbourhood contains at present nearly 1,200 lunatics; in Scotland there are on the other hand about 1,500 patients scattered over the whole country, partly in colonies, of which Kennoway, with its 47 patients, forms one of the largest, and partly allocated singly in different villages. It has been further shown that the persons who are selected for the colonies in Scotland are by no means such as are capable of such profitable work as might be taken seriously into account. Not that this is universally the case in Gheel either, though it has always been put forward as characteristic of the majority of cases. It is, especially, the economical view that the patients earn a part of the cost of their maintenance, or, in other words, that they can be kept cheaper than by any other system that has always been loudly proclaimed by the advocates of Gheel. There is some saving obtained by the Scottish system too; but the value of the patients' labour plays an inconsiderable part in it. In discussing the financial side of the whole question, we shall have again to refer fully to this point. In the meantime it is necessary to draw attention to a third and a much more important difference, already mentioned, between the systems pursued in Gheel and in Scotland. I refer to the difference in the selection of the forms of insanity, or rather, we should say, the degrees of insanity which are in each case entrusted to family care. This brings us at once to the position which this mode of treatment occupies in the general organisation of lunacy administration in the two countries; and it would contribute to the elucidation of the subject if we were to examine somewhat more closely the historical development of the Scottish system and the principles according to which it has been carried out.

The reform of the whole system of lunacy administration in Scotland dates from the year 1858. Taking example from English arrangements, there was then established the Board of Lunacy, whose five members (Commissioners in Lunacy, partly medical and partly legal) have, as in England, the task of controlling the asylums, and of effecting the removal of any abuses in them. From the first, however, there was a wider duty assigned to the Board of Lunacy in Scotland, it having been empowered and commissioned by law to ascertain the total number of insane persons existing in the

country, and to examine into the whole extent and condition of mental disease in the community. It was at the same time authorised to exercise a supervision over the insane who are not in asylums, and within certain limits to decide on how they were to be disposed of. These powers were, of course, to be differently applied according as the patients were maintained out of their own funds, or supported at the public expense. (We—in Germany—possess no single word for the latter class which in English is indicated as *Paupers*, and the opposite of which is *Non-Paupers*. I shall, for brevity, make use of these terms in the subsequent portion of this paper.) The Board of Lunacy possesses unrestricted authority over lunatics of the pauper class: that is to say, it is required that every person of this class, who is declared by the certificate of two medical men to be insane, must be kept by the parish in an asylum, unless exemptions to this be granted by the Board; and the disposal of the particular individual with his own or another family be sanctioned. In that case, however, the patient remains under the supervision of the Board, and this is exercised in the manner and by the persons we became acquainted with in the description of Kennoway. As to the insane of the non-pauper class on the other hand, there are the following enactments:—1. In the case of those who are boarded with strangers, they must be placed there by authority of the Sheriff;\* and thereafter reported to the Commissioners, who must visit them regularly. 2. When a patient is kept with his own relatives he must be reported to the Board of Lunacy by his guardians or by his medical attendant if his insanity has been of more than a year's duration, or if coercion or restraint has been employed. The powers of the Board in regard to these two classes are restricted to the ascertaining of the facts, and it cannot insist on a patient being placed in an asylum against the wish of his relatives, except, of course, where such confinement is prescribed by law on account of danger to the public. According to a late amendment of the law, however, patients of the non-pauper class, if proved to have been subjected to ill-treatment, may be placed in an asylum at the instance of the Board by the same form of procedure as in the case of dangerous lunatics.

It was thus, according to the requirements of the statute, the first duty of the Board to inform itself as to the number and the condition of lunatics not in asylums. For this purpose two additional officers were attached to the Board as

\* Or of the Board of Lunacy.—Tr.

Deputy-Commissioners, whose duty it should be to travel over the country, and to find out and visit all the insane living under private care. In the case of patients, who, according to the information received, did not seem to require visitation, written reports were obtained from the local authorities. It took from the year 1858 till 1862 to complete the data, which were thus to serve as a basis for administration. And the result of this troublesome investigation was, as given for 1st January, 1862, as follows :—

The total number of the insane living in private dwellings was estimated at 3,628. Of these 1,747 belonged to the pauper class, and 1,881 to the non-pauper. The total number of lunatics in Scotland was 8,207, of whom 5,289 were paupers, and 2,918 non-paupers. So that 44 per cent. of the lunatics of every class in the country were found to be non-resident in asylums ; of the *pauper* lunatics 33 per cent. were so circumstanced, and of *non-paupers* there were no less than 65 per cent.

I wish to state at once that Scotland is now richly supplied with asylums. It possesses, for a population of scarcely three millions and a half, 22 public asylums, distinguished as royal, district, and parochial asylums, and eight private asylums, besides 15 lunatic divisions in poorhouses. If, in spite of this rich provision, there is still a fifth of the insane provided for otherwise, it may be safely concluded, even without being in the possession of accurate data, that the proportion will not be less in other countries. The difference will be found to consist in this, that in other countries it is at the utmost sought to ascertain the number of such patients on the occasion of making a census ; while in Scotland the individual condition is ascertained, and at least the most necessitous of the patients—the poorer classes—are placed under the supervision and protection of professional administrators. It will now be easily seen what position the family treatment occupies in Scotland in reference to asylum treatment. It rests upon the view that family treatment is not a recently introduced arrangement ; but that it has existed everywhere hitherto, and still exists, to a considerable extent, side by side with asylum treatment. Its extent is first exactly ascertained, and it is then determined which classes of patients can in this way receive sufficient supervision, and which must be relegated to the asylums. It was by no means intended by the introduction and extension of family treatment to render a portion of the existing asylum provision superfluous,

or to empty the buildings. On the contrary, the first result of the new administration was an increase in the population of the asylums, and a decrease in the number of extra-mural lunatics. During the earlier years this decrease was very considerable; afterwards it became less so; and last year a trifling increase took place, so that we may probably conclude that a somewhat fixed proportion has now been reached. The numbers given in the last Annual Report will best exhibit this. It refers to pauper lunatics in private dwellings.

1st January, 1858	.....	1784
„ 1859	.....	1877
„ 1860	.....	1847
„ 1861	.....	1787
„ 1862	.....	1741
„ 1863	.....	1679
„ 1864	.....	1637
„ 1865	.....	1609
„ 1866	.....	1568
„ 1867	.....	1548
„ 1868	.....	1521
„ 1869	.....	1500
„ 1870	.....	1469
„ 1871	.....	1463
„ 1872	.....	1492

The facts here exhibited, showing, as they do, that in the carrying out of the system the number of pauper patients under family treatment has decreased by about 300, furnish a striking proof that the administration has been conducted in Scotland in an unprejudiced manner, and that there has been no intention to push family treatment into prominence after any doctrinaire fashion. And here the reviewer in the “*Journal of Mental Science*,” whom I have already mentioned, seems to be altogether in the wrong when he finds in this a “satire of events,” and comforts the Scottish Commissioners for their supposed failure after such earnest and energetic exertions, with “the contrariness of things in general.”

It was certainly impossible to leave the family treatment in the state which the preliminary investigation disclosed. It was often found that instead of being cared for, the patients were neglected and abused.

Many of these unfortunates were discovered in a condition of extreme starvation, destitute of the most necessary cloth-

ing, covered with filth, and shut up in rooms which were more like stables than human dwellings. The poverty and ignorance of their friends combined to bring about this state of things. The parishes were generally content to escape, by this system, the burden of a more expensive mode of providing for the insane; and they were frequently prevented from altering the existing state of matters, owing to the families which bordered on actual pauperism being unwilling to accept public aid, and so become subject to the regulations enforced in the case of state-aided patients. It was, therefore, evident that the family treatment required to be restricted within narrower limits than it had hitherto been; and further, that a considerable number of the patients who were themselves suitable for family care could not be allowed to remain in their own families. For such patients other lodging was sought with families in better circumstances, first in their own parish, and when such was not to be found there, other parishes were resorted to. So it came about that patients were sent into the country districts where the carrying out of family treatment doubtless involved less difficulty than in towns; and, as was natural, an appreciable number gradually accumulated in certain villages. Thus arose the colonies with one of which we have become acquainted, and whose existence has, it appears, given rise to the widespread error that lunatic villages, similar to Gheel, have been founded in Scotland to take the place of asylums.

Having now made ourselves acquainted with the principles of the Scottish system, we come back to the question with which we started, and which has to be investigated—what class of patients is at present provided for in Scotland according to the family system? The regulations under which the Board of Lunacy grants exemption from removal to an asylum are as follows:—The patient must be (1) apparently incurable; (2) harmless; and (3) must not suffer from any bodily or mental disorder for which such special treatment is required as can be obtained only in an asylum. One of the most common objections to the family system is that curable patients, who might be cured by the medical or mental resources of an asylum, are thus handed over to non-professional guardians, who either neglect what would contribute to their cure, or actually endeavour to prevent it. This objection has recently been again raised, and not without reason, by E.

Cyon,\* against the system pursued at Gheel. If, in spite of the regulations we have quoted, there are still some cases of recovery in Scotland among the patients in private dwellings, this may be easily accounted for by the fact that the prognosis in regard to curability is always difficult. Such recoveries may take place where patients have been kept for years in an asylum, and where they have been liberated under the supposition that permanent mental enfeeblement had taken place. The beneficial influence which is sometimes exerted in such circumstances by a complete change in the surroundings is well known to every alienist. The second condition of fitness for family treatment which was laid down was the harmlessness of the patients. This is to be taken in the broadest sense, and generally excludes those in whom states of excitement are still to be apprehended. Mechanical restraint, which is so much employed at Gheel, is in the Scottish family system strictly forbidden; patients who may require it must be treated in an asylum. Restraint is not excluded from treatment in Scotland with the same anxious rigor as in England. The third regulation excludes from family treatment in Scotland a whole class of patients who are sent to Gheel—all those who require the care of a specialist. To these belong the lowest grade of idiots who are completely helpless, and all those in whom there is uncleanliness of habit. There are thus excluded in the first place most of the paralytics, and an equally large proportion of epileptics. All conditions characterised by excitement, and the extreme forms of mental feebleness are also excluded, as well as all recent cases. What is left then for the family system? The answer is easy to give—A great proportion of the simply feeble-minded and demented, in whom neither considerable excitement nor uncleanliness exists, and for whom the supervision which may be exerted in family life is sufficient to enable them to lead a contented life, though of themselves they are incapable of earning a livelihood. Some of them are able to work for the families with whom they are placed; the majority, however, are incapable of such labour, at least to any extent; and what little they do is useful rather as an occupation for themselves than as a source of profit to the guardians.

What alienist doubts the existence of this class of patients? And that they exist in sufficient number to

\* Ueber Irrenpflege und Irrenanstalten. Virchow's Archiv. Bd. 42, 1868. Heft 3 und 4.

deserve consideration and to require that special provision should be made for them is shown in the experience of Scotland. Let it be reiterated that in the year 1872, of the 6456 pauper lunatics then in the country, 1492—more than a fifth—were provided for in private houses; that is to say, belonged to the class that has just been described.

I insist strongly on this, because E. Cyon has laid it down that the kind of patients for whom family treatment is really suitable, embraces so small a number that it is not worth while beginning to adopt it. If, indeed, those patients only were in question, who are now always placed in asylums, Cyon would to some extent be right. Of these only a comparatively small proportion are suitable for family treatment, though not so very small as he seems to think. If, however, one takes the broader view of lunacy administration taken in Scotland, and which undoubtedly must yet be taken, we shall have to deal with the total number of insane persons in the population; and of these it will be found that a full fifth will be suitable for family treatment. It is worthy of remark here, that Griesinger, who, in the later years of his life, came repeatedly forward as the zealous apologist of family treatment, was also led by his experience to the belief that about a fifth of all the insane might be treated at home. Of this fifth, the greater part consists of patients who at present are not in asylums, nor under special supervision. The other and smaller part consists of those who might safely be drafted off from the present asylum population. If the family treatment be carried out according to this idea, any hope of obtaining a reduction of present expense may be at once given up. On the contrary, the cost will increase in proportion to the increased burden thrown upon the general or local administration. It is not the substitution of a cheaper form of treatment for that provided in asylums that is looked for, but an extension of public care and supervision to a whole class of lunatics who have hitherto been deprived of it. This can be obtained better and cheaper for the class in question by the adoption of family treatment, than either by building new asylums proportionate to their number, or by making adequate additions to those already established. As I say better and cheaper, it may be necessary, having regard to Cyon's statements, to be somewhat more thorough in my demonstration. It is true that he has been mainly influenced in his rejection of the family system by the study of what is to be seen at Gheel; and as it has been shown that

the two are by no means identical, it might appear superfluous to go further into his arguments. These are, however, in part susceptible of wider application, and might possibly also be employed against the Scottish form of the family system.

Leaving the financial aspect of the question for subsequent consideration, and confining our attention to the question whether it is better that the class of patients already indicated as suitable should be provided for in private households, we must consider the subject as Cyon has done, from two points of view—first, in the interest of the patients themselves; and second, in the interest of the families and the parishes in which they are boarded. In the interests of the patients, family treatment is, of course, only to be thought of when the therapeutic appliances of an asylum can be of no further use. It is only those who in the asylum are merely fed, and to some extent supervised, and who are unsuitable for either somatic or psychic therapeutics, who can enjoy the same advantages in the private household as in the asylum. But they enjoy this additional advantage that they feel themselves freer and more comfortable than in the asylum. This greater degree of freedom, or rather of feeling of freedom, which is attainable under family treatment, has always been the most powerful argument of its advocates; and it will continue to be so until it is shown that some other system can also produce it, and perhaps also possess other excellencies which would raise it above the family system. Such a claim is now advanced in a very special manner by Cyon for the so-called agricultural system. Let us see how far he is justified in this.

The agricultural colony, as exemplified at Clermont, may, as one of the modes of treatment involving more freedom, compete in many ways with the family treatment. We have here also the absence of the stricter supervision and the prison-like seclusion of the regular asylum; and at the same time a feeling of freedom and comfort is produced among the patients by the consciousness of active exertion and fulfilment of duty. The pity is that these advantages cannot be shared by any great proportion of those who are fit for the freer mode of treatment. The agricultural colony can flourish only if it receives none but useful persons, whose work may be utilised without any very elaborate supervision, and who may so far be treated in the same way as persons altogether sane. The organisation of labour becomes impossible,

if any considerable number of labourers are so deficient either in bodily strength or fitness for discipline as to be incapable of continuous and regular occupation. No one has demonstrated this to me so convincingly as the founder and director of the model institution at Clermont, M. Labitte, who is justly recognised as the originator of the agricultural system. But it is far from being the fact that all patients who may be trusted under less rigid supervision than that of an asylum, are able to work; just as far as that all who are able to work are fit for less rigid supervision. If in all our asylums we were to separate the contingent who are fitted for freer treatment, and from these again to select those who might be allocated to an agricultural colony, we should have a considerable remainder, who, though suitable for the first class, would have to be excluded from the second. To this remainder, again, we must add that much larger number of patients who are at present not in asylums, and who, without being suitable for the agricultural colony, are very well able to live in freedom. We thus see that the only system which coincides in regard to freedom with the family system, is susceptible of comparatively limited application; and there still remains the before mentioned fifth, whose circumstances can be fully met only under the family system. When I say that this class consists exclusively of those who cannot be further benefited by special treatment, the possibility of recovery or improvement is by no means excluded. That such occurs in Scotland in spite of the restriction of the cases to what are apparently incurable has been already mentioned, and how such a circumstance may be accounted for has been shown.

The one question, therefore, whether family treatment is satisfactory in the interests of the patients—always bearing in mind the class specially suitable—we have answered in the affirmative. We have now in the second place to deal with the influence which the family system exerts upon the surroundings of the patients—upon the guardians. Cyon regards it as injurious, and views the family system as a direct social danger. He believes that he has found evidence that the sane population of Gheel are the victims of mental decay and imbecility, and concludes that this results from their constant association with the insane. By a comparison with the inhabitants of the adjoining districts, he claims to have found that this mental decay is by no means a common characteristic of the populations of that region, but a specific

peculiarity of the residents in Gheel. And he arrives at the conclusion "that one must war hand and foot against the introduction of a system which ought rightly to be regarded as the system of artificial breeding of an imbecile population." As regards the fundamental fact, on which this assertion is based, I must confess that I was not able to detect this mental decay of the inhabitants of Gheel, although I had, on account of Cyon's statement, my attention specially directed to the point. I admit that the one day which I spent at Gheel was not sufficient to justify a decided opinion on this question. But I may at least affirm that the signs cannot be so obvious as Cyon's assertion would lead one to expect. I make little also of a further proof which Cyon brings forward when he remarks that this degeneracy of the Gheelese is currently recognised by their neighbours. "They," the neighbours, "and indeed several other authorities, speak of the Gheelese in no other way than as 'Gheelsche Jotten' (madmen)." If we were to rely on this kind of talk we should have to pass the same judgment on the inhabitants of most localities—or quarters, in larger cities—where lunatic asylums are situated, as on the inhabitants of Gheel. Those living in the neighbourhood of such a locality have generally the kindness to use the name of the place as synonymous with "mad." And the sane representatives of the so notorious name have somewhat of the character of madness attributed to them, a result as unintentional and constant as it is unjustified. I have of course no wish to deny the possibility of psychical infection. There was even so recently as last year a series of interesting facts connected with this subject, contributed by Kramier and Nasse. And in the latest form of disease with which we have been favoured by our French brethren, the *folie à deux*, this symptom has found at any rate paradoxical expression. But the possibility of infection under certain conditions, such as existed in all these cases, does not warrant conclusions of such general application as have been drawn from it by Cyon. Indeed, if the degeneracy of the Gheelese were indicated with greater certainty than it really is, it would still remain to be proved that it had its source in the influence of the patients upon the sane inhabitants. For it would certainly be as reasonable to attribute it to another and much more generally observed cause of degeneracy. Such degeneracy is well known to occur frequently in such populations as derive their subsistence, less from regular labour than from

the profit made by boarding strangers. Were such a result to take place at Gheel, we should not regard it as any greater danger than that which may exist in so many watering places and other places of resort where strangers are a source of revenue. In any case the danger apprehended by Cyon can be apprehended only when such an accumulation of lunatics is permitted as in Gheel. In the smaller colonies, where the boarding of such persons does not form the main source of emolument to the population, there will be no reason to be alarmed by it. A danger more real perhaps than psychical infection exists in all lunatic colonies, and especially under the family system, that of sexual intercourse between sane and insane, and in consequence the direct generation of mental disorder. According to the statement of the *chef de section* who showed me through Gheel, there have been two cases of pregnancy there among female lunatics during the last 18 years. Supposing this number to be accurate, it cannot be called large, for it must be remembered that here and there such events take place in Asylums also, in spite of the most careful supervision. The computation must of course remain incomplete, as the other and no less important factor, the effect of the male insane inhabitants on the sane females, cannot be ascertained. Let us, however, in the meantime confine our attention to what is known in regard to the influence of female insane residents, and we shall find that there are several facts bearing on the question among the data which have been obtained by the Scottish commissioners. The significance of the question socially as well as psychiatrically may be appreciated without further discussion.

When the first inquiries were made in Scotland into the condition of the lunatics not in asylums, it was discovered that amongst the general population there was an absolute ignorance of the danger which has been suggested, and complete indifference in regard to it. Lunatics and grown up idiots of both sexes were sometimes found half or almost wholly naked, going about at large in the villages. They frequently shared their bed with sane adults of the opposite sex, and it may thus be understood how there were between 150 and 200 insane women in Scotland who had conceived and borne children, in many instances more than once, during the existence of their malady. About two fifths of their offspring were idiotical. The means by which it was sought to prevent this danger in Scotland has been previously mentioned. Patients in whom marked erotic tendencies

appeared, or whom it was impossible to have properly supervised in this matter in a private household, were unconditionally ordered into the asylums; that is to say, the permission to retain them in the family was withdrawn. The females who are left in private dwellings, or who are transferred thither from asylums, are by preference such as have passed the age of conception; and where this is not the case, guarantees must at least be given that the greatest possible care will be exercised in supervision. The results which the efforts of the Board of Lunacy have attained have been favourable in regard to this. At least among the paupers, cases of pregnancy have become extremely rare. And they are always more frequent in the class which borders on complete poverty (known as "indigent") and which does not receive public aid. We have seen too that the Board has much less authority over this class of patients than over the paupers; it is only in a position to draw attention to such circumstances when they occur, without being able, except in very special instances, to prevent them. If we now try to draw a conclusion from such a fragmentary statement of the facts, we acknowledge to Cyon that there are certain social dangers involved in the system of family care of the insane, though in a different direction from those he sets forth. But we also find that these dangers are not indissolubly bound up in the system, but are the result of imperfect supervision and improper management. They afford indeed an unmis-takeable proof of the propriety of what is attempted in Scotland. Supervision requires to be exercised over all patients in the country who are under private care; and it is necessary to determine by a professional judgment in what cases such care ought to be sanctioned.

In drawing attention finally to the financial aspect of the family system, I must again insist strongly on the impossibility of effecting by the adoption of the Scottish plan a saving of the expense entailed by former modes of providing for the insane. We can only deal here with the question whether in extending public supervision to the whole class of pauper insane, it would be cheaper to organize the existing family treatment, or to erect additional asylums. The best data for comparison are furnished by Scotland, as we have the family and asylum systems there side by side, and have no need to introduce figures from other countries which have other national and social conditions. I may therefore extract from the Fifteenth Scottish Report a table of the annual cost of

lunacy since 1858, which gives the figures for four separate years. They refer only to the pauper lunatics, and show the cost, according to the kind of provision, to have been as follows :—

Years.	Cost of Maintenance.		For Certificates cost of Trans- port, &c.	Total.
	In Establish- ments.	In Private Dwellings.		
	£	£	£	£
1858	61302	14230	5118	80650
1862	80060	14567	3558	98185
1866	91337	15236	4229	110802
1871	113567	16166	4446	134179

If we omit the sums given in the fourth column for transport, certificates, &c., which are shared by all modes of treatment, it appears that of the total expense of providing for the paupers in each of the four years, the family treatment cost in the first year 18·8, per cent. then 15·3, then 14·3, and lastly 12·4 per cent. The proportion of patients disposed of in this manner, however, is much larger than is represented by the proportion of cost. Thus there were in 1858, of all pauper lunatics, 37·6 per cent. placed in private households; in 1862 there were 31·9; in 1866—28·1; and in 1871—23·5 per cent. The cost, therefore, of patients so placed, is found to be considerably less than that of patients in asylums. This becomes still more evident if we calculate the amount which is paid per head for each day, according to the several modes of provision. I shall select from a table in the Scottish Report the numbers applicable to 1871. It only relates to the various modes of providing for the pauper class of patients. The average daily cost was respectively, in public asylums, 1s. 7¼d.; in private asylums, 1s. 4¼d.; in parochial asylums, 1s. 2¾d.; in lunatic wards of poorhouses, 11¼d.; and in families, 7¼d. Thus in regular asylums a lunatic costs in Scotland each day from between 13 and 14 to 17 silver groschen; in poorhouses, about 10 groschen; and in private households only a little over 6 groschen. Let us look also at the average cost over the whole country. The expense is somewhat higher in some districts and lower in others, than

what has just been given. In the poorest parts of Scotland, in the islands, the daily average amounts to only  $4\frac{1}{2}$ d.; in the highlands to  $6\frac{1}{2}$ d.; in the agricultural districts to  $7\frac{1}{4}$ d.; and in the opulent manufacturing districts to  $7\frac{3}{4}$ d. The highest sum paid in certain counties, as is the case for instance at Kennoway, is  $10\frac{1}{4}$ d. a day. The kind and cost of family treatment depend on the material well-being of the inhabitants. The lunatics in the Shetland Islands live in the same miserable huts as their sane fellow-countrymen, and partake of the same simple fare; the patients found in the well-to-do southern parts of the country reside in the better built and more comfortable houses of their native places, and receive correspondingly better fare. For the just appreciation of these figures there is this further to be considered. The sums which are given as the cost of maintenance are only what is paid by the parishes for the support of their paupers. And in the cases of those who are kept with their own relatives, a portion of the burden will naturally be borne by the families, so that what is received from the parishes can only be regarded as a supplement. In the other cases, where they are placed with strangers, the whole cost of maintenance is borne by the parishes. There is here illustrated one of the advantages of the family system, that it can be adapted to the peculiarities of each case; and the burden thrown upon the public rates is only what the relatives cannot support. When patients are sent to a public institution of any kind, the parish is required to pay the entire cost, and it is very seldom able to recoup itself, even to the smallest extent, from the relations who belong to the aid-receiving class.

We have thus seen that a certain class of patients in Scotland are provided for far cheaper in private households than could be done in asylums; and it must be believed that a similar financial result would also be obtained in other countries as well, where it is wished to follow that example in carrying out a general supervision of the insane.

Against this view Cyon brings forward a national-economical consideration which appears very generally to prejudice the financial aspect of the family system. We have seen already that the only other form of free treatment, which decidedly surpasses the asylums in regard to economy, is not applicable to our class of patients. But, according to Cyon, the asylums also surpass the family system. His most forcible argument is this. If one were to lay the question before an architect, whether for a certain number of patients it would be cheaper

to build a large establishment for all, or to build many small separate establishments, there could be no doubt that he would give the preference to the former. And this is undeniably true, just as the further statement that it is cheaper per head to board a large collected number than to provide for them separately. If, indeed, we had only to do with family treatment, as understood when so-called cottages are built in England, or if Mundy's plan were adopted according to which every house set apart for family treatment is provided with its seclusion room, its padded-room, its bath-room, etc., so as really to represent a small asylum—if such experiments in family treatment as these are what are thought of, it is unnecessary to say that they have no bearing on what has been discussed here. We have here to do rather with the utilisation of existing dwellings, to avail ourselves of habitations which have more accommodation than is required for their present occupants; and thus, as it were, to render productive certain capital which would otherwise lie dormant. Even if it were necessary in order to make them thoroughly satisfactory to add a story or build a room, our architect would, without doubt, regard this as cheaper than to purchase an extensive site, and then build an asylum on it. Cyon, indeed, remarks justly that many asylums have been erected in too splendid a style, and are maintained too luxuriously. But it may be doubted whether the least expensive asylums could compete with the simple form of family treatment. And it will not do to compare in this respect the asylums of different countries, which differ in social and economical conditions; if we wish fairly to investigate the cost of the two forms of treatment, we must make our comparisons between them as they are found in the same country.

The result of our inquiry seems on the whole to be, that we must recognise in the organisation of the family system, as it exists in Scotland, an advance in lunacy administration; and we must conclude that a similar organisation is desirable for other countries. What has been attained—the bringing of lunatics not in asylums under professional supervision—is an object which has scarcely been approached elsewhere, but which cannot long be anywhere delayed. As regards the supervision of asylums, public opinion is already prepared to demand the utmost. No regulation seems to be severe enough to allay that public terror, illegal incarceration in asylums. The evils to which this feeling leads when

it is embodied in legislation, are shown in the French lunacy law, whose disadvantages have lately received their due condemnation from Pelman.\* The admission of patients has been surrounded by such difficulties that they generally arrive at the asylum much too late; but, on the other hand, it is not less difficult at present to get incurable patients out after they have been once received. It seems to occur to no one to require any supervision over the public when they have to do with the insane. It is here, however, that real dangers exist which are wholly ignored by the law. Cases are kept in concealment, and not sent to asylums till they have become incurable; and instead of care they often receive the roughest treatment. The public hears nothing of these except when by accident collateral circumstances drag such a case as that of Barbara Ubryk into the light of day. The results of such neglect are matters of daily observation in asylums.

These remarks are applicable in different degrees to different parts of our fatherland. Attempts are being made in many places by enlightening the public and the authorities to have patients brought early to the asylums. And it is endeavoured in many asylums to exert a certain amount of supervision over discharged patients as long as possible. But the object cannot be completely attained until a special law is passed, and a suitable authority constituted with power to see it carried out. What is required is a lunacy law, but a law founded on principles diametrically opposed to those of the French law. Whether the Scottish pattern should be exactly copied—whether the inspecting authority, which would, of course, have also to undertake the supervision of asylums, should be similarly constituted—does not require immediate discussion here. The fundamental principles may, however, be adopted with confidence from Scotland.

Strasburg, June, 1874.

\* Ueber Irrengesetzgebung und das französische Irrengesetz. Allgem. Zeitschrift f. Psych. 31 Bd., Heft. 1.

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*An Illustration of Local Differences in the Distribution of Insanity.* By P. MAURY DEAS, M.B., M.S., Lond., Medical Superintendent of the Parkside County Asylum, Macclesfield.

(Read at a Quarterly Meeting of the Medico-Psychological Association, held at Glasgow, April, 1873.)

That the amount and types of insanity vary in different countries, and even in different portions of the same country, has long been a recognised fact; but my object in this short paper is, by means of an illustration drawn from one district, to show within what narrow limits, as regards locality, great differences may be observed in the distribution of insanity.

Our district, comprising the eastern and north-eastern portions of Cheshire, embraces five Unions, with a total population at last census of 267,000. The population of the respective Unions, which, for convenience, I shall designate A, B, C, D, E, is as follows :—

A	.	.	.	.	.	.	49250
B	.	.	.	.	.	.	47700
C	.	.	.	.	.	.	36280
D	.	.	.	.	.	.	59250
E	.	.	.	.	.	.	74500

- A is mainly agricultural, with small townships.
- In B, the staple industry is cotton, but it contains a number of small townships, scattered over a hilly, rugged country.
- C is partly manufacturing (silk); partly rural and country townships.
- D is devoted to silk, and consists mainly of a large town, situated in a deep valley, on the banks of a small and much polluted river.
- E consists of a large township, devoted to cotton; the chief town being again in a valley, with a highly polluted river running through it.

I mention these points to show that there are marked differences, physically and socially, between the various Unions. The first thing that drew my attention to this subject was the large excess of male admissions during last year (1873), the men exceeding the women by no less than 50 per cent. As a rule, the number of female admissions slightly exceeds that of the males, though even a cursory glance at the statistics

of different Asylums will show that the variations in the relative numbers of the sexes are considerable.

Since the opening of this Asylum the men have each year exceeded the women. In 1871 and 1872 the excess of men was only four, but in 1873 it rose to 21.

I find that for several years previous to 1868 the male and female admissions to the old Chester Asylum were almost exactly equal; but since that date the males have exceeded the females, and apparently in an increasing ratio. At the close of 1871 the numbers remaining comprised, for the first time, more men than women; and at the end of 1872 the difference amounted to 21.

Out of 249 patients transferred from the old to the new Asylum in 1871, 108 were men and 141 women. This excess of women was, no doubt, mainly due to the fact that, even where the sexes are in equal numbers on admission, there is a greater tendency in the women to accumulate from the smaller mortality which prevails among them. Owing to the death rate among the male patients here having been very high (13·6), and that among the women exceptionally low (5·3), there were at the end of 1873 still 22 more women than men, in spite of the great increase in the male admissions.

Confining ourselves now to the five Unions I have indicated, I find that the average numbers of patients in the Asylum belonging to these Unions on December 31st, of the four years 1866-69 inclusive, were 114 men and 143 women. The corresponding number for the four years 1870-73 inclusive, were 125 men and 151 women.

In other words, while the men increased 10 per cent., the women only increased 5, and this in spite of the natural tendency in the women to accumulate over the men, and the exceptional death-rates of the last two years.

The admissions show this fact still more clearly. Of the patients transferred from Chester in 1871, 43 per cent. were men, and 57 women; while in the new cases admitted since, the proportions have been exactly reversed, viz., 57 per cent. of men to 43 of women—during the last year the ratio of men rising to 60 per cent.

In order to look into the matter a little more closely, I took the Unions separately. I was led to do this by observing that, although the women transferred from the Chester Asylum exceeded the men by 33, yet that in one Union there were more men than women.

The following table shows the percentage of men on the admissions from the five Unions. 1st—Transferred from

Chester. 2nd—On the total new cases since the opening.  
3rd—On the admissions of 1873.

Percentage of Men on the Admissions.			
Union.	Transfers from Chester.	Total New Cases.	Admitted 1873.
(A)	43	51	66
(B)	48	30	40
(C)	26	59	71
(D)	54	64	60
(E)	41	60	50

It will be seen from this that Union D has the highest proportion both among the transfers and the new cases, and was the only one in which the men exceeded the women at the opening of the Asylum ; and in this respect also it stood alone at the close of 1873.

The proportion of men on the total new cases shows that while in C, D, and E they were considerably in excess, in A the sexes were almost equal, and in B the men were only 30 per cent. It will also be noticed that C had an exceptionally low proportion of men among the transfers ; and it may be added that the increase in the proportion among the new cases was mainly in 1873, when it rose to 71 per cent.

In connection with this I have prepared the following table, which shows the total number under treatment from each Union, the percentage of these affected with Organic Brain Disease, including General Paralysis, Epilepsy, Softening, &c. ; also the percentage who have been discharged, and who have died.

Union.	Total No. under Treatment since May, 1871.	Percentage of Organic Disease.	Percentage of Discharged (Recovered and Relieved).	Percentage of Deaths.
(A)	95	19	23	12
(B)	51	10	24	12
(C)	80	19	30	11
(D)	114	23	15	18
(E)	122	25	13	16

It will be seen at once that in all the percentages there is a great contrast between A, B, and C on the one hand, and D and E on the other.

The two latter, which also had the greatest excess of male admissions, have a high percentage of cases of organic disease, a very low proportion of recoveries, and a very high ratio of deaths.

It is dangerous to work too much with figures and percentages, but I cannot think that the above is only an accidental coincidence, especially when taken with the following further statement as to the cases admitted during 1873 alone. Of the A admissions 70 per cent. recovered during the year, none died, and none were the subject of organic disease.

Of the B admissions 40 per cent. recovered, 6 per cent. died, and 12 per cent. were subject to organic disease.

Of the C admissions 38 per cent. recovered, 14 per cent. died, and 19 per cent. were subject to organic disease.

On the other hand of the D admissions, 30 per cent. were the subject of organic disease, 22 per cent. died, and only 13 per cent. recovered.

Of the E admissions 33 per cent. were the subject of organic disease, 11 per cent. died, and 11 per cent. recovered.

In order to trace out this interesting point a little further, I have gone into the question of the actual increase of pauper insane in the district and in the different Unions during the last ten years. I have taken, as a basis for the population, the census returns of 1861 and 1871 respectively; and for the numbers of insane, the numbers actually under treatment in Asylums on the 31st December, 1863 and 1873 respectively, correcting these numbers, however, as far as possible, for changes in the ratio of the insane in Asylums to those in the Workhouses.

	Increase or Decrease per cent. of Population, 1861—1871.	Increase per cent. of Insane, 1863—1873.
A.	+21·7	15·7
B.	+ 2·0	0
C.	+ 5·0	66
D.	— 5·0	80
E.	+ 4·5	60
Whole District.	+ 5·0	40

These figures, while they show a large increase of insanity in the whole district in proportion to the increase of population, are still more striking in reference to the different unions. It will be seen that in A and B there is a slight proportional decrease of the insane; while in D, E, and C the increase in the number of the insane as compared with that of the population has been enormous, in the case of the first mentioned union amounting to no less than 80 per cent., and this in spite of an actual decrease in the population. I find that C, which also shows a large increase, is peculiar in this respect, that much the largest part of this increase took place prior to 1866, the increase since then only amounting to 9 per cent., while in the case of Macclesfield the increase since then has been 70 per cent. The full significance of these figures however lies in this, that it is the same unions in which such a large increase has taken place that I have already shown are distinguished by a growing tendency to an increase of insanity among the men as compared with the women, as well as by the unfavourable nature of the types of insanity.

The following table finally shows the proportion per 1,000 of the total number of pauper insane to the entire population at the end of 1873 :—

Union.	Ratio per 1,000 to the Population.
A.	1·60
B.	1·44
C.	1·95
D.	2·25
E.	2·9
Whole District.	2·25

This tells the same story in another form. The above ratio is not excessive as compared with that throughout the country generally; but Cheshire has generally had one of the lowest ratios. In 1871 it was 1·6 per 1,000 over the whole county. This is just the average ratio for A, B, and C, while that for D and E is 2·67.

From all these considerations we must, I think, draw the conclusion that there is a greater development of insanity going on in some portions of this district than in others; and that in these portions the following general facts are observed.

1.—A large increase of insanity relatively to that of the population.

2.—An increasing ratio of insanity among men as compared with women.

3.—A large proportion of cases due to organic disease or degeneration.

4.—A small ratio of recoveries.

5.—A large ratio of deaths.

No doubt 3, 4 and 5 are to some extent dependent upon number 2, owing to the much greater frequency of general paralysis among men than among women. But the unfavourable nature of the forms of insanity in these districts is certainly not to be altogether accounted for in this way, nor would this account for the large actual increase of insanity.

I shall not attempt here to offer any speculations as to the possible causes of these discrepancies, although the subject is one well worthy of attention. I will only remark that the local hygienic conditions in D and E are far from favourable, and that there is a great deal of intemperance, the usual handmaid of sanitary neglect. It will also require a longer process of induction in future years thoroughly to establish the conclusions brought out by these statistics, and to do away with the risk of the proverbial fallacy which lurks in all statistics. They appear striking and almost conclusive; but of course must not be taken at more than their true value.\* Apart from the local interest attaching to these facts, they are, I think, worthy of some attention in another and more general sense.

They seem to show that the factors which give rise to insanity may vary greatly, even within very narrow limits as regards locality. This we know to be the case with regard

\* I find that an analysis of the admissions, discharges, and deaths during the year just ended (1874), shows to a remarkable extent the same peculiarities in the different districts, to which I have drawn attention above. In A, B, and C taken together, the sexes are equal in the admissions, and the percentages of recoveries, of deaths, and of cases of organic disease are respectively 34, 5 and 11, while in D and E, there is a considerable excess of male admissions, and the percentages of recoveries, deaths, and of organic disease are 16, 16 and 28. In regard to the unfavourable nature of the cases, D again heads the list.

to many other diseases, and the modern science of preventive medicine is based largely on this knowledge. May we not hope that some day the knowledge of such differences as I have noticed may lead to the discovery of their causes? Through careful observation of, and comparison between, the hygienic conditions and prevailing occupations of different places, and of the moral and social habits of the people, the causes of the varying liability to insanity in particular districts may be discovered, and of the various forms which it assumes, as well as the laws which govern its spread and increase. Thus would be laid the foundations of a noble branch of preventive medicine which would have for its object not only to check the ravages of that social scourge, insanity, but to help people to develop their moral, as well as their physical nature, in accordance with the laws of health and the facts of physiology.

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*On the Physiology of General Paralysis of the Insane and of Epilepsy.*—By GEORGE THOMPSON, L.R.C.P. Lond.; Medical Superintendent of the Bristol Lunatic Asylum.

(Continued from page 586, Vol. xx.)

In the introductory remarks contained in the previous portion of this essay, I said that, as far as possible, I would refrain from referring to the condition of the nervous centres as seen after death, except to explain the nature of certain phenomena seen in these diseases during life. Having arrived at the second portion of my subject, I shall draw attention to the condition of the brain and spinal cord where death has been the result of an epileptic fit, or while the patient has been in what is now so well understood as the *Status Epilepticus*.

But I shall first take a cursory glance at the healthy brain, its structure and functions.

The brain is an erectile organ—in other words, an organ whose functions require that it should be capable of receiving a varying amount of blood. This variation of blood flow is not necessarily general at any given time, but, according to the function to be performed, may be local. It is fair to presume that there are times when the portion of the brain to which is assigned the function of intelligential secretion will be called into active play, while those portions to which

we connect the functions of sense and motion may be at rest. At these times of activity of function, then, whether local or general, a rapid flow of blood is essential. In health the blood vessels are highly distensible, and this distensibility is of a vital, rather than a mechanical character. The superabundant muscular tissue which they possess, with a corresponding absence of the other constituents of the muscular walls, allows for the vital character of dilatation and contraction of the cerebro-spinal vessels. The gelatinous nature of the reticular tissue allows the relative displacement of the all-important nerve-cells; while the variable amount of cerebro-spinal fluid allows of expansion of the cerebral mass without compression as the result. The conditions essential to a due performance of the functions of the brain are, then, healthy brain tissue, *i.e.*, cells and fibres; healthy neuroglia, or reticular tissue; healthy vessels—vessels capable of receiving and acting on the command to dilate or to contract, whatever may be the source of such command; and healthy coverings capable of secreting or absorbing the cerebro-spinal fluid, according to the needs for such secretion or absorption. Given all these conditions, and the Medico-Psychologist would find his occupation gone.

In the disease now under discussion (*i.e.*, epilepsy) it has been proved beyond doubt that at least one of these elements of the brain structure is invariably at fault. This faulty portion is the neuroglia. Dr. Batty Tuke, in the small, but able, portion furnished by him in the “Manual” by Drs. Bucknill and Hack Tuke, shews\* how the neuroglia is the subject of no less than five distinct forms of degeneration. These are (a) general sclerosis, (b) disseminated sclerosis, (c) atrophy, (d) miliary sclerosis, (e) colloid degeneration. At least three of these degenerations—the first, second, and fourth—have been found in epileptic subjects; the others occurring thus:—Atrophy in senile dementia, and the colloid form in “chronic cases.” The coarser anatomy of brains of epileptics generally shews hypertrophy, real as to volume, but false as to the actual proportion of nerve tissue; in other words, there is “just† the ordinary amount of nervous matter, *plus* a certain quantity of interstitial exudation.” The sclerosis of epileptic brains is every day seen. Who has not, in slicing down such a brain, felt the hard resilient touch given to the knife, almost amounting to the sensation given in cutting

\* Op. Cit., fol. 625.

† Handfield Jones, quoted in “Bucknill and Tuke.”

down a half-boiled potato? The hypertrophy is shewn by the manner in which the brain of the genuine epileptic is seen to fill the cranial cavity. The brain bursts from the dura mater when that membrane is divided; and the sulci on the surface of the organ are reduced to mere lines formed by the dipping of the more immediately investing membranes, so closely are the convolutions packed together. This condition is always the more marked when a fit has been the cause, or the immediate precursor, of death. The heightened specific gravity of the epileptic brain is a further indication of the changes which have come about in its minute structure.

Now, I do not undertake to show how these changes arise, but rather desire to consider their physiological bearings in bringing about certain phenomena known as an epileptic seizure. And when I speak of an epileptic seizure I do not desire to limit the term to what is known as a thorough epileptic fit. There are many gradations in the truly epileptic habit which may be evinced in loss of consciousness, a burst of fury, a sensory hallucination, or a motor spasm, one or all of them. These gradations of the disease are well known as Epileptic Vertigo, Aura Epileptica, Partial Epilepsy, and good instances are given by Trousseau.\* The young amateur musician, whose case is reported by this writer, who would continue to play the violin during a period of perfect unconsciousness, is a good instance of "local" epilepsy. There was no recognised muscular spasm. The few bars read were sufficient to excite such automatic movements as to enable him to continue his part. The other cases I would quote from Trousseau are, that of the architect who walked high planks while undoubtedly unconscious of what he was doing, and that of the president of a tribunal, who would leave his seat for a time and return to it without being aware of the act. In every large lunatic asylum many instances of subjective delusion, generally of a transitory nature, are to be found. Cases of motor spasm without loss of consciousness are not uncommon. So that it would be absurd to say that because in such instances you do not have all the phenomena which go to make up an "epileptic fit" you do not see before you cases of epilepsy.

The occurrence of such cases of *partial* epilepsy, as some would term them, teaches us this, that, whatever may be the morbid cause of the phenomena displayed, it may be limited

\* Art. Epilepsy, Dr. Bazire's Transl. fol. 59.

in its extent, or at least comparatively so limited. Where loss of consciousness is alone the symptom no morbid alteration of the structure of the sensory motor centres need be found; and where an illusion of sense, or a disturbance of motion may be the only evidence of functional disturbance, change in the portions of the brain known as the *intellectorium* might be looked for in vain.

I have drawn particular attention to the condition of the reticular tissue as found in epileptics, for the reason that I am hopeful of shewing that this tissue, when sclerosed, has much to do with the cause, if it is not the very cause itself, of true epilepsy, and I think, if I pursue the subject so as to consider the conditions which may be the cause of epileptiform seizures occurring in toxæmia or in certain other diseased states of the brain, it will be seen that the views I hold have at least common sense to commend them.

I should say, here, that I cannot believe or see any sense in the doctrine of a "discharging lesion" put forward by Dr. Hughlings Jackson, and supported, I am sorry to say, by so eminent a physiologist as Dr. Ferrier. Shew me an "open sore" or a "catarrh," and I will admit that here we have a "discharging lesion;" but I aver that the term is not well applied to a disturbed function such as that known as epilepsy. I object to the term because of its liability to mislead, just as the names "inflammation" and "fever" were, in days gone by, deemed to imply a demon got into the blood, which must be exorcised. Dr. Ferrier, in his account of his electrical experiments, takes much pains to convince his readers that no "lesion" of the brain structure was effected, doubtless being convinced that to destroy brain-matter would result in a total failure in his experiments, which, as performed, were, and are, the wonder of the scientific world. Destroyed brain-matter cannot be the origin of such force as would lead to a spasm of muscles, or an illusion of sense.

The evidence of the microscopists is that brain-matter proper, *i.e.*, the cells and the fibres, is not necessarily destroyed in epileptic subjects, but rather that its disproportion to the other tissues is in consequence of the undue development of these other, and less important, tissues.

I would then explain the occurrence of epileptic seizures in this way. There is a sclerosed neuroglia, whether the result of the insane diathesis, whatever that may be, or the result of a specific disease, such as, say, syphilis. This hardened neuroglia is no longer able to accommodate itself

to the frequent, and often sudden, changes in the quantity of blood passing through it, and the least resisting portion of the brain substance—the cells and nerves—is suddenly exposed to an unusual degree of pressure. Now, as the various centres are subject to varying degrees of hardening, as of varying degrees of blood-flow into and through them, so are the phenomena which follow upon the disturbance varying in character. But I would remark here that there is seldom any degree of change of phenomena in individual cases. This will explain how it is that fits as they occur in the same individual, possess such a remarkable resemblance the one to the other; the cry is the same; the manner of falling is the same—so that often the part once bruised in a bad epileptic never heals, and is always receiving further laceration; the character and degree of the muscular spasm hardly ever varies—if once unilateral, always unilateral; the period of unconsciousness (if this occurs) is always of the same length; and the mental disturbance will vary as little as the other phenomena.

I think it is Dr. Crichton Browne who relates the case of an epileptic girl, who, when seized with a fit, always cried “bolsters and pillows,” and she never varied the cry, even to the extent of putting the “pillows” before the “bolsters.” Whatever the “impression” that she had may have been which gave rise in her mind to the necessity of having about her such useful things, the impression was always the same. Numerous instances such as these will occur to every experienced asylum officer, and I need not dwell further on this point.

It follows then, that, as a rule, the morbid condition which gives rise to an epileptic seizure is more or less localized, and, that, though all the organs which go to make up a cerebro-spinal system may be in some degree involved by the disease, there will be some organs which will be implicated more than others. The excitation of spasmodic action—or rather that turgescence of vessels which at least accompanies spasm—probably has its seat elsewhere. The very exciting cause of vascular dilatation may be objective or subjective. The sight of some loathsome object, or an object of terror, will momentarily blanch the nervous system, and if an otherwise healthy condition exist there the disturbance will end, though doubtless a reactionary turgescence will sooner or later follow. But, if there be a sclerosed condition of the reticular tissue, the *ictus* may be manifest in severe mental

or motor disturbance, or both. In this way those sudden and unaccountable impulses to strike, which are seen in the insane, may be placed amongst the epileptiform diseases. I described such a case in this Journal:\* it was that of a shoemaker, who for years was impulsive, and manifested no motor spasm until a short time before such an attack which led to his death. After death the usual engorged condition of an epileptic, dying in the *status*, was found.

I have under my care a man (G. W.) whose tracing may be seen in my paper on "the Sphygmograph in Epilepsy,"† who, besides inheriting the hereditary taint, is the subject of marked tertiary syphilis (acquired); a grainer by profession, of whose clever handiwork this asylum bears abundant proof, but who cannot be allowed to do "oak" graining, because of the severe fits certain to follow, as he says, because of the severe mental strain necessary for the performance of this kind of work; though he can, with impunity, do other work to which it is not necessary to apply much "mind."

Another exciting cause may be a "sensation" arising, possibly, in the disturbance of the function of some organ remote from the head, yet closely allied to the suspected seat of epilepsies—the *medulla oblongata*.‡ The stomach is often the subject of such "sensations." It would be difficult to say how much the association of a "qualm" in the stomach with an epileptic fit may not eventually become a simple habit. In such cases the disturbance which follows may become purely automatic, just as the musical dog (of history) howled when a discordant chord was played in his hearing. But however automatic may be the nature of an epileptic habit, the structural changes of nervous tissue must be taken for granted.

I may now refer to those epileptiform attacks occurring in senile cerebral atrophy, general paralysis, and allied diseases, and in toxæmia.

For healthy action I had presumed a healthy state of the organ called into energy. Whilst in true epilepsy we find the disease confined to the neuroglia, in the disease now under more immediate consideration other portions of the brain seem to be involved. For besides the degeneration of the interstitial substance, the vessels and membranes partake of the general disease. In addition to the loss of function of

\* April, 1874, fol. 94.

† W. R. Reports, Vol. II., fol. 305.

‡ Van der Kolk.

the neuroglia, the very important changes in the membranes lead to perversion of function of these parts. Hence the condition so common in senile dementia, known as the "water-logged" brain. It would almost be a matter of dispute whether the atrophy of the brain substance was the result or the cause of the presence of so much cerebro-spinal fluid as is invariably found in these diseases. I should be inclined to ascribe to the diseased membranes the power to originate the atrophy by compression alone. It is beyond doubt that the membranes are diseased, and, therefore, it is but fair to presume that their function is perverted.

The cause of an epileptiform seizure may then be said to be—the sudden driving in of a quantity of blood upon a brain already compressed by an abnormal amount of fluid. The same may be said as to the effect of poison taken into the blood, such as, say, opium and hydrocyanic acid, though, doubtless, the effect of the former is a general congestion, while that of the latter is more local in its operation. In poisoning by opium, charcoal-fumes, chloroform, and similar substances, the intense turgescence of the brain, confined, as it is, within its unyielding bony walls, may account for that perversion of its function, as shown in the phenomena of unconsciousness and muscular spasm and paralysis. Turgescence, or what would in effect be the same, serous congestion, is absolutely necessary for the excitement of convulsive action. Dr. Ferrier is most careful to state\* that in all cases, whether the fits were general or partial, the immediate antecedent was an excited, hyperæmic condition of the cortical matter of the hemispheres, that is, at the points to which the electrodes were applied.

The strong resemblance which exists in the sphygmographic tracings taken by myself, in epilepsy, and those I have already quoted† as having been taken by M. Loraine, of Paris, in tetanus and poisoning by burning charcoal, is, of itself, sufficient proof that similar vascular conditions exist in these three morbid states. I cannot say to what immediate influences this abnormal state of the vessels is due. I must for the present rest contented in shewing that such an unusual state does exist. That it is of a reflex nature there can be little doubt in surmising.

It is a singular fact that all medicines that possess the confidence of the profession as being antagonistic to convul-

\* W. R. Reports, Vol. III., fol. 39.

† W. R. Reports, Vol. II., fol. 303.

sive action are such as are known to control the vascular system. Ergot of rye, belladonna, bromides of potassium and ammonium, valerian, and its combinations with zinc, are familiar instances. I was once so fortunate as to commence a sphygmographic tracing, which began with a form modified by ergot, and ended with the characteristic tracing found in epilepsy; the patient in the ten seconds required to pass the slide over the clock-work box of the instrument having gone off into a severe fit. This tracing may be seen faithfully copied in my paper already quoted.\* I would not rest contented, however, in knowing that certain drugs have a kind of "governor-ball" action over the vessels, for at the best treatment by such drugs can only be deemed as palliative. Such treatment may ward off the fits until the "epileptic habit" has become accustomed to that form of treatment, when, as we often see, the fits return with an accumulated force. The treatment, which is to be of a lasting and effectual character, is that which shall have for its basis a means of attacking some constitutional habit or condition. If that habit be, say, syphilitic, then it is reasonable to suppose that iodide of potassium will do more than "ward off" the fits; if strumous, then cod-liver oil will have a marked effect; if "herpetic," arsenic should be given; and so on.

My object in putting together these imperfectly worked-out speculations, is that a more rational system of therapeutic treatment should be called into being, and not so much through an observation of the results of disease as through a real appreciation of the disturbances of function, for evidences of which, as I firmly believe, we may not always look in vain. So long as, when first baffled, we do not throw aside, as useless, such means as the ingenuity of man may produce, or scoff at the efforts of others, of the value of whose work we are, perhaps, not capable of forming a just estimate, so long shall we assist at the grand progression which science is ever making.

\* W. R. Reports, Vol. II., fol. 304, fig. 1.

*Constructive Incapacity : an American Will Case.*

In the American "Journal of Insanity" for Jan., 1875, there is an article by Dr. Ray on a contested will—the Duncan Will Case—in which he discharges, as he says, "the ungracious task of exposing some features of a trial little calculated to shed much lustre on the medical jurisprudence of his country." Had he said that it was not calculated to shed any lustre, but well fitted to cast some ignominy, upon the medical jurisprudence of his country, it would have been hard to dispute the statement. There was nothing in the will itself, nothing on the face of it, which yielded the least indication of insanity; not one of the persons who were in frequent and close intercourse with the deceased for nine months before his death, most of whom were persons of education and of good social position, had the least suspicion that he was not in his right mind; and those who were about him when he made his will, and up to the time of his death, agreed that he was not in any degree unduly influenced in the disposal of his property, and that he understood perfectly what he was doing. In fact, the main provisions of his will, which was made eleven days before his death, were in accordance with the scheme of distribution of his property which he had adopted in two previous wills made by him. If ever, then, a will appeared to be a rational act rationally done, this was one.

But the testator had not left his brothers, whom he declared to have treated him badly, and who admitted having on one occasion uttered something very like a threat to throw him out of window, so much money as they thought they ought to have had, though he had not left them unremembered, and he had left more money than they thought he ought to have done to Wesleyan Chapels and Sunday Schools in which he was interested. Dissatisfied in consequence, they disputed the will. And the surprising part of the affair, which Dr. Ray finds so humiliating to his country, was that eight medical witnesses were found, one of them a professor in a medical college, who, never having seen the testator, knowing only that he had suffered and died from disease of the heart and lungs, declared confidently in Court that his lungs must have been incapable of performing their special function of purifying the blood, and that the brain must have been so poisoned in consequence as to be incapable of anything like healthy mental exercise!

This is an exhibition of medical—we cannot say scientific—testimony which may make the cynic sneer, but will make the judicious grieve. Two things in regard to it strike us with astonishment. First, that any court of justice in the world, pretending to have rules with respect to what is and what is not evidence in a case, should ever have admitted such loose and baseless conjectures as evidence; and, secondly, that any medical man should have been found with so little regard to his own reputation, and to the honour of his profession, as to gravely propound such a theory in the name of science. We are not by any means unqualified admirers of the way in which things are conducted in English courts of justice, but we do rejoice to think that no judge in England would have admitted such testimony. The attempt to introduce it, had any counsel cared so little for his own credit as to have made it, would have been scouted with contempt. We know well, again, that medical witnesses in this country have often given strange and lamentable testimony in courts of justice, whether being ignorant and reckless, or whether biassed by their wishes, interests, or the strong spirit of partizanship, or whether infected with the devouring greed of gain or notoriety; but we hope and think that a solicitor would have been compelled to have gone out into the highways and byeways in order to collect eight medical witnesses willing to give such testimony as was given with regard to the testator's probable mental state in the Duncan Will Case.

It is right to say that besides the pleuritic effusion and the hepatization of the lung found after death, on which these gentlemen constructed their theory of the testator's incapacity, there was found some opacity of the arachnoid; and this, it was alleged, supported their opinion, as it would probably have given rise to some mental disturbance. This is not quite so startling a fabrication as the other, but a student who had made a dozen *post mortem* examinations would not need to be told that it is equally baseless.

It is sad to observe what a complete farce any trial in which scientific questions are involved is fast becoming under the present system of procedure in English and American courts of justice. The Americans, true to their mission, have, however, beaten us and all creation in this respect. A solicitor, whose duty is to do the best he can for his client, goes from medical man to medical man until he discovers one who is ignorant or unscrupulous enough to say what he wants; neither the Court nor the public ever hear of the men who have refused to give evidence; and

when the case is tried, the opinion of one medical man is supposed to be as good scientific testimony as that of another. The Court and jury, knowing nothing of the scientific merits of the question, so ignorant of its very elements that it is impossible they should be instructed during the brief period of the trial, have no means of appraising the relative value of the opinions given, and when they find a conflicting testimony, take no account of the medical evidence. So it comes to pass that the trial is no better than a solemn farce. And yet in most of the cases in which the medical testimony is conflicting, it is perfectly certain that a proper tribunal would have no difficulty in arriving at the truth. Certainly, had the judge in the Duncan Will Case been assisted by the competent advice of an eminent physician sitting by his side as assessor, the medical testimony would not have occasioned him any trouble. Whatever lawyers may think of the disagreement of doctors, we can assure them that definite medical knowledge does exist, and that much medical evidence which is given now because its worthlessness easily escapes exposure, would never be given before a competent tribunal.

We should not have referred to this case, which has no scientific importance—which seems to us of interest only to Americans, as it concerns medical morality and the administration of justice—had not Dr. Ray's article brought back to our recollection that in May, 1872, we were asked for an opinion on the case. The opinion, given in writing, in answer to questions, the purport of which will appear from its tenour, was as follows:—

I have perused carefully the evidence taken to sustain the will of the late Thomas G. Duncan, which has been submitted to me—namely, the evidence of Joseph Ferris, draper, and of Robinson Scott, Wesleyan minister, who were witnesses of the will; of Thomas H. Pardon and William Aitken, the physicians who attended Thomas G. Duncan during his last illness; of James Stewart, law clerk, and James Rhea, U.S. Consul at Belfast; of James Lindsay and Mrs. Lindsay, together with a report of the *post mortem* examination by Dr. Murray.

The report of the *post mortem* examination proves that Thomas G. Duncan died from disease of the heart and lungs. The morbid appearances described in these organs are quite consistent with the existence of a sound state of mind. They would not, by themselves, warrant a suspicion of any failure of mind.

The brain itself is said to have been free from disease, and the opacity of the arachnoid membrane over both hemispheres, though often observed in the bodies of those whose minds have been

affected, is sometimes met with in the bodies of those in whom there has been neither mental derangement nor mental weakness.

The symptoms exhibited during life were such as would naturally accompany the morbid conditions found after death. The difficulty of breathing, the inability to lie down in bed, and the lowness of the voice were attributable to the state of the heart and lungs. The wish to return to America a few days before his death, when he was manifestly unfit for such a voyage, seems to have been such a longing as is sometimes exhibited by dying persons, who believe, in spite of assurances to the contrary, that they might recover if they were only back in the scenes of their youth or of their former activity and health. It may be presumed that the increasing weakness of body during the last few days of life, and a probable deficient supply of blood to the brain in consequence of the diseased state of the heart, had in some degree impaired his judgment and affected the vigour of his mind.

Whether the provisions of the will indicate entirely free and rational action will, of course, depend somewhat on what were the testator's former relations to his brothers, and to those persons to whom he has left the bulk of his property.

The medicines which he was taking up to the time of his death were not of a character to affect the mind.

Judging from the data supplied in the evidence of the witnesses, and in the report of the *post mortem* examination, I do not perceive valid reasons for supposing that the will signed on the 20th May, twelve days before death, was not the voluntary act of a person of sound mind.

The gentleman who did us the honour to request our opinion upon the evidence, and who introduced himself as a Judge —, was, we fear, disappointed with the result. We have heard no more of him since. He no doubt believes that English physicians give gratuitous advice to their American cousins.

H. M.

## CLINICAL NOTES AND CASES.

*Bromide of Potassium in Epilepsy*, by P. NORTON MANNING, M.D., Inspector of the Insane in New South Wales.

In the "Practitioner" for January, 1874, the late Dr. Anstie related a case of Epilepsy "cured" by Bromide of Potassium as the solitary instance within his own experience in which well-developed fits were completely stopped and remained absent long after the discontinuance of the medicine, and mentioned that Dr. Hughlings Jackson, whose general experience on this subject was in substantial agree-

ment with his own, had never seen such a case. The combined experience of Dr. Anstie and Dr. Hughlings Jackson must have extended over such a wide field that I do not doubt but that the two following cases, in which Bromide of Potassium, in combination with Cannabis Indica, appeared to "cure" well-marked and established Epilepsy, will be interesting:—

Wm. J. B., æt. 6, was admitted into the Asylum for Imbeciles, &c., at Newcastle, N.S.W., on February 5th, 1872, from the Catholic Orphanage at Parramatta. The Lady Superior, who was not able to give any information as to his parents, stated that he was one of two brothers who had been for upwards of two years under her care, and that he was a bright, intelligent boy. The first epileptic attack came on without apparent cause six months before his admission to the Newcastle Asylum, and was very severe; the subsequent attacks were frequent and severe, and the lad slowly became imbecile. The Visiting Medical Officer of the Orphanage, in signing the necessary forms for admission, described him as extremely imbecile, and quite incurable. On arrival he was found to be very weak-minded, dirty in habits, and partially paralysed in the lower extremities; the fits were very frequent and severe, and no peripheral cause whatever could be detected. After admission he slowly retrograded until early in July, 1872, when special treatment was commenced by Mr. Richard Harris, the Medical Officer of the Asylum, to whom I am indebted for notes as to the treatment of the case. Fifteen grains of Bromide of Potassium, with fifteen drops of Tincture of Cannabis Indica, were given three times daily; the fits soon became less frequent, and at the end of four months, during the whole of which time the treatment was steadily continued, had quite ceased. With the cessation of the epileptic paroxysms there was decided improvement in both mental and bodily power, and by the end of the year health had been completely re-established. In April, 1874, treatment having been for many months discontinued, and the fits remaining absent, I concurred in recommending his discharge from the Asylum, and he returned to the Orphanage, where he has remained quite well up to the present time.

T. B., æt. 17, was admitted into the Hospital for the Insane, Gladesville, N.S.W., on June 9th, 1873. He had been an epileptic for eleven years. The fits at first occurred at rare intervals, but had latterly become much more frequent and severe, and decided failure of mental power had supervened. On his admission the manner was dull and heavy, and the memory much impaired. The epileptic fits were frequent and severe, occurred both by day and night, and were often preceded by an "Aura" consisting of pain and twitching in the right hand and arm. No peripheral cause could be discovered, and the

assigned cause, an injury to the head occurring three years before the fits commenced, and leaving no scar, was more than doubtful. After remaining under my immediate observation for six weeks, the patient was transferred to the Newcastle Asylum, and Mr. Harris at once placed him under treatment consisting of Bromide of Potassium and Tincture of Cannabis Indica, in half-drachm doses, three times daily. He had no fit after commencing to take the medicine, which was continued for eight months. The mental condition greatly improved, and the patient showed himself aware of the benefit of regular treatment, and applied for an extra dose of medicine on the occurrence of any threatening symptoms. The patient was discharged in April, 1874. He has since lived at a short distance from the Newcastle Asylum, and up to the present time has remained quite well. His father, in a letter received a few days since, speaks of him as quite well, and as "never having a fit or a sign of one," since discharge.

With respect to the general value of Bromide of Potassium in Epilepsy, the experience of Mr. Harris at the Newcastle Asylum, as well as my own in the Gladesville Hospital, is largely in its favour. In all except a small number of cases the frequency and severity of the paroxysms are much reduced, whilst the health improves under its administration. In a considerable number of cases in which fits occurred three or four times daily they have been reduced under treatment by the Bromide to one or two a month, whilst a great improvement in general health has been coincident with this marked diminution in the number of epileptic paroxysms. It has always seemed to me much more efficacious in combination with Cannabis Indica than alone, and much more serviceable in children than in adults, and in young adults than in old ones. In a small number of cases, whilst diminishing the frequency of the fits, it has seemed to increase their severity, and caused the collection into one paroxysm of the mental and bodily disturbance which before found vent in a series, but I am quite unable to point out anything to distinguish these cases, except that they are, as a rule, if not always, adults of at least 30 years of age.

*The Proportion of Epileptics to the Ordinary Asylum Population.*

The proportion which Epileptics bear to other patients in asylums was suggested as an interesting subject for report at the meeting of the Medico-Psychological Association held in August, 1873. As nearly the whole of the insane in this colony are collected in four institutions, the number living

with friends being extremely few, as none are sent for treatment to institutions beyond the limit of the colony, and as the census was taken with great accuracy, and great care taken in subsequent estimates of changes in the number of the population, the information on this head was easily collected, and is valuable as being more definite and exact than could be furnished by the majority of superintendents of British Asylums.

The following return shows the Proportion of Epileptics to the Asylum Population in New South Wales on December 31, 1873 :—

Hospital for the	No. of Patients.			...	Epileptics.			...	Proportion of Population.		
	M.	F.	Tl.		M.	F.	Tl.		M.	F.	Total.
Insane, Gladsville ...	267	294	561	...	22	12	34	...	1 in 12'13	1 in 24'50	1 in 16'50
Lunatic Asylum, Parramatta. Free .....	499	205	704	...	41	21	62	}	1 in 13'90	1 in 10'23	1 in 12'66
Convict*	29	7	36	...	0	0	0				
Criminal†	42	3	45	...	0	0	0				
Asylum for Imbeciles, &c., Newcastle .....	100	32	132	...	17	8	25	...	1 in 5'88	1 in 4	1 in 5'28
Licensed House for Lunatics, Cook's River	5	43	48	...	0	1	1	...		1 in 43	1 in 48
Totals .....	942	584	1526	...	80	42	122	...	1 in 11'77	1 in 13'90	1 in 12'51

The percentage, as will be seen, is—Male 8·49, female 7·19. Total 7·99. The very little difference in the proportion in the two sexes, and the total absence of Epilepsy among the patients in the Criminal Divisions of the Parramatta Asylum, are curious facts.

The total population of the colony on December 31st, 1873, was 307,329 males and 252,946 females, a total of 560,275, the proportion of insane persons being 1 to 367 of the population.

Chinese Lunatics.

The total number of Chinese patients in the Asylums of New South Wales on September, 30, 1874, was 47, and their proportion to the Chinese population of the colony, which has been estimated by the excellent returns made to the Registrar-General with great accuracy, was 1 in every 140.

This enormous proportion is no doubt due partly to the decrease in the Chinese population of the colony through return to China, which, in the decennial period 1861-71, was 44·41 per cent., and which has gone on steadily ever since ;

\* Those classed as convicts were originally deported to this colony, became insane before the expiry of their sentences, and are still at the charge of the Imperial Treasury. They are mostly aged patients.

† The criminals are confined under the Criminal Lunacy Statutes in force in the colony, and include a certain number of Queen's pleasuremen.

partly to the accumulation of Chinese patients in the asylums, as they very rarely recover their reason sufficiently to allow unconditional discharge, have no friends to take charge of them whilst still insane, and appear to live to the average age; and partly to the fact that the present Chinese population consists largely of the unsuccessful and hopeless classes, the cream of the population having obtained money and returned to China, whence, since the cessation of alluvial gold-digging, there has been little migration into this colony.

Thirty-four Chinese patients have in six years come under my immediate care, and of these four only have been discharged, and two have returned after a short absence from Hospital. Of this number 13 were admitted for melancholia without marked delusions; 11 for delusional insanity, in which the type was melancholia in more than half the cases; and 10 for dementia. The causes of insanity in the cases in which information was obtained, were abuse of opium, loss of money, desertion of wife, starvation, and masturbation, the two former being the most frequent. Among the whole number of patients now under care one only is an epileptic, and the memories of officers who have been long connected with this institution fail to recall more than one other instance of epilepsy among this class. I have never seen nor heard of a general paralytic. The Chinese patients, as a rule, speak very imperfect English; communication with them is, therefore, difficult. The manners, customs, modes of thought and feeling of the Anglo-Saxon are altogether foreign to them, and the impression so often made on other patients by kind and timely persuasion or advice, and by association with those of sound mind, is altogether lost to them. These facts may in some degree account for the want of success in treatment.

Information on insanity as seen in China would be of the greatest interest to almost all alienist physicians in the Australian colonies, and, perhaps, to many others. Will some medical missionary or medical practitioner in China kindly furnish it?

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*Case of Acquired Idiocy, complicated with Unilateral Convulsions.* By KINGROSE ATKINS, M.A., M.D., Assistant Medical Officer, District Lunatic Asylum, Cork.

As the subject of epileptic and allied convulsions is just now attracting a considerable share of attention, both from pathologists and clinical observers, I think the particulars of

the following case may be of sufficient interest to be placed on record.

J. R., a lad, aged 10 years, was admitted into the Cork District Lunatic Asylum January 24th, 1874, with the following history. His mother states that her confinement with this child was perfectly natural and easy. The boy during infancy was of average development and intelligence; he began to speak when about a year and a half old, and continued to do so until three years of age, when a change became noticeable in him; he began constantly to turn his head from side to side, and shake it, and at the same time it appeared to increase in size. Co-existent with this he became quite foolish, ceasing to speak, and becoming quite cross and unmanageable. As he grew older, year by year he became very wicked, if irritated or annoyed. When he was about six years old he was seized with a fit, falling down insensible, but not being convulsed, and in a short time he recovered. About twelve months after he had another attack, in which both sides of the face and both arms were slightly convulsed, and again, in a year and a half after, he had a third seizure; and this time the convulsions were general, much more severe, and extending over a longer period. During the four years which had elapsed since the first attack his mental state had become worse; he grew extremely cross and unmanageable, biting and tearing anyone who interfered with him. His bodily health and physical condition were not at all impaired; he was as strong and active as any boy of his age, and his limbs were well developed. If not constantly watched, he was continually wandering away from home, and running into danger. About four months previous to his admission here he had another convulsive seizure, worse than any of the former attacks, from the effects of which his mother thought he would have died; the muscular movements in this attack, apparently, also affected both sides of the body. After this fit, and in consequence of his irascibility and proneness to wander away from home, if not closely watched, he was admitted here, though not exactly a suitable case for an institution of this nature.

His family history is good, the parents and other children being healthy. No member of the family had ever been insane, though the mother states that the father is of a very hot and passionate temper, and prone to intemperance.

On admission the boy appeared stout and well nourished; apparently about ten years of age. His head, though not of the hydrocephalic type, seemed rounder and fuller than normal; it measured  $21\frac{1}{2}$  inches in circumference,  $14\frac{1}{2}$  inches from root of nose to occipital protuberance, and  $12\frac{1}{2}$  inches across the vertex, from ear to ear. His expression denoted want of power of attention and comprehension; he had not, however, the peculiar stare and unmeaning look of the congenital idiot, nor had he the high vaulted palate peculiar to that class. He was very restless, noisy, and unmanageable; attempted to bite and scratch anyone who went near him, and was very dirty in his

habits. He could not articulate a word distinctly, though he appeared to make attempts to do so, and was constantly uttering a sharp, prolonged cry, and at the same moment clapping his hands violently together. He evidently understood what was said to him, as when he became more docile he came when called by name.

On the evening of his admission he was attacked with a convulsive seizure, and when I saw him some four or five minutes after, he was just emerging from the fit, being quite unconscious, breathing heavily, the outer angles of the eyelids and of the mouth were twitching in a direction upwards and outwards, as well as both arms and legs, which were also slightly convulsed, but at longer intervals and in a lesser degree. These spasms soon subsided, and by next morning the little fellow had entirely recovered from their effects.

The second attack he had since coming here occurred some months ago, on the day after his mother had visited him, and was reported to have been in all points similar to that which he previously had. The next attack, and the one I wish to draw particular attention to, happened in the beginning of last August. I witnessed, I may say, the whole of the fit, as I happened to be entering the ward as he fell. He first became quite unconscious, lying on his back with his eyes directed upwards. As the convulsion came on, the outer angle of the left eyelid was drawn upwards and outwards, both eyes simultaneously moving in the same direction. Almost at the same moment the left angle of the mouth was drawn in the same direction, by the action evidently of the zygomatic muscles. As the spasm proceeded from above downwards, the left arm was jerked up and drawn across the chest, and the left leg was bent and drawn towards the body by the muscles passing from the trunk to the thigh, and at the same time the whole left side of the body was jerked upwards, and partially rotated from left to right. During the time these convulsions lasted, the entire right side of the body was perfectly motionless, not one of the muscles of either the face, arm, or leg twitching in the slightest degree. The spasms were throughout clonic, the contractions subsiding almost instantly, and recurring again with as short an interval. The pupils were widely dilated, the right one reacted to the influence of a candle held close to the eye. These unilateral left-sided convulsions lasted, from being almost momentary in the face, for about seven or eight minutes elsewhere, the intervals gradually growing longer and the spasms less severe, the pupils at the same time becoming smaller and resuming their natural size. The twitching of the eyelid and mouth continued for some minutes after that of the arm and leg had subsided, in a few minutes more the patient returned to consciousness, and in a little time was as bright and lively as before, there being no drowsiness or stupor, as is generally the case after ordinary epileptic attacks.

On October 9th he had another seizure at about 10.30 in the morning. The spasms commenced in the left side in a similar manner to the last, and after a short time subsided; however, after a few

minutes' interval, they recommenced, and this time both frontal muscles were first affected; the right orbicularis next began to work, and gradually the entire right side became severely and momentarily convulsed, the spasms being more or less irregular, and the left side not being engaged. This attack lasted until two o'clock in the afternoon, when it subsided, and the lad was as well as ever again. Since then he has had one other "right-sided" seizure, which differs from the others in that it was followed by hours of sleep, though occurring in the morning as before.

On the pathology of this interesting case few practical remarks can be offered. All that can be said must of necessity be more or less theoretical. The history and symptoms pointing to "hydrocephalus," I would feel inclined to place the case—in Dr. Ireland's classification—under the head of "hydrocephalic idiocy." I say from the history and symptoms, as although there is now no decided enlargement of the head, yet from the peculiar cry and mental restlessness, taken with the initial symptoms, the presence of effusion at one time or another may be fairly suspected. In several cases recently published, in which effusion was found both in the arachnoid and lateral ventricles, there was no increase in the size of the head, and this, I think, may be explained in this way: that as general development takes place, the head also naturally increases in size, but the brain, from being pressed upon by the fluid present, does not undergo any corresponding development, a space is naturally left within the cranium, which the effusion can occupy; and therefore the bones of the cranium, not suffering the same amount of internal pressure as they did before, will, after the lapse of several years, present an almost natural appearance, the abnormal expansion which would otherwise have taken place being compensated for by the diminished internal pressure. The convulsive seizures are evidently a symptom of disease, and the question which first, and most naturally, demands our attention, is to what are they due, and where is the lesion to which they owe their origin? As Dr. Hughlings Jackson has well said, all cases of convulsions and paralysis should be regarded "as experiments made by disease on particular parts of the nervous system of man." They are the exact homologues of the artificial experiments made by the physiologist, who, when he wishes to determine the exact distribution of a nerve, both stimulates and destroys it. Indeed, this double method of study is essential to a correct understanding of these cases of nervous disease, as a "destroying" lesion of a circumscribed portion

of the cerebrum may produce no obvious effects, while a "discharging" lesion of the same portion may produce very striking results. As an illustration of this, I may cite the case of a celebrated mathematical professor at Oxford, who up to the time of his death was occupied over the most abstruse problems, and yet on a necropsy being made, one hemisphere of the brain was reduced to a mere sac of pus, thus showing that such extensive disease may exist without the development of correspondingly severe symptoms. In fact, in all cases the convulsions, or paralysis, as the case may be, are only symptoms of the disease, and that not constant ones, as the disease itself may be present, and yet there may be no symptoms to declare its presence, or mark its progress.

Taking now the foregoing case as an example, I would say that the attempt to localise the movements present in the "fit" in some portion of the brain, is more easily done, and with a better chance of correctness, by adopting Dr. Hughlings Jackson's suggestion, and comparing the convulsions present with the paralysis present in a case of hemiplegia. Keeping in view the "left-sided fit," we see that the convulsions followed the same course, and were in the same ratio, as the palsy in a case of left hemiplegia. Now, knowing as we do from the recorded results of many cases of this disease that the "destroying lesions" causing the paralysis are situated in or near the corpora striata and optic thalami, or the surrounding convolutions, we may, with a fair show of reasoning, localise the site of the "discharging lesion" giving rise to the convulsions, and affecting similar groups of muscles supplied by the same nerves, in somewhere about the same region of the organ. To some it may seem a thing almost impossible that the cerebral convolutions—those organs from time immemorial considered to be solely for the evolution of ideas—can ever give rise to movements, but it has now been, by the march of scientific inquiry, put almost beyond the region of uncertainty that sudden discharges give proof that sensori-motor processes are the anatomical substrata of ideas. Granting now, from the results which this comparison affords, that the locus of origin of the convulsions lies in some of the convolutions of the corpus striatum, we have next to inquire what is the nature of the discharging lesion causing these convulsions, a task even more difficult than the last, as here we are entirely in the region of speculation. Are the convulsions the result of a local irritation from a collection of fluid, tumour, &c., or

are they due to simple instability of the grey matter? If effusion does or did exist, they may be the effects of its present or past existences.

It may next be interesting to inquire whether the muteness, or rather the loss of expressing words, coming on as it did immediately before the convulsive seizures, is in any way connected with them, or depending upon the same cause. It certainly appears to be so. We have the mother's statement that "the boy was beginning to speak well, when, as the head began to affect him, he ceased to do so, and became foolish." Is the loss of speaking power "ataxic" from inability to bring into co-ordinate action the muscles requisite for articulation? or is it "amnesic" from loss of memory of words, the former being low down in the scale of sensori-motor processes, the latter being high up in that scale? The difference between these forms is more of degree than kind, the one gradually merging into the other, and both being in the same series of nervous processes. It appears to me, from observation of the case—particularly from noticing the attempts at articulation the boy makes when pressed, as, for instance, when shown any familiar object, such as his cap, food, &c., and repeatedly asked to name it—that the defect is of the "ataxic" degree, and not from loss of memory for words. Now any injury done to the corpus striatum or convolutions close to it, according to the temporary or permanent character of the lesion, causes loss of co-ordinating power in the muscles of articulation, and as I have before showed that the anatomical origin of the convulsions may probably be in the same region, may it not be that the latter, and the defect of speech, are due to the same pathological conditions; the "discharges" giving rise to the former being of a temporary character, while the lesion which has caused the latter is of a more permanent character? Here, then, we must leave this case, until, should it be the will of Providence to remove the boy, a post mortem examination may render the case pathologically complete.

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*Case of Syphilitic Caries and Perforation of Calvarium—Encysted Abscesses in Cerebral Hemisphere, discharge of one of these externally—Alternation of Epileptic Convulsions and Purulent Discharge.* By JAMES HOWDEN, M.D.

J. S., admitted 5th Oct., 1871, from Dundee, æt. 51, a gardener and weaver, married, Protestant. He has been under treatment in the Dundee Infirmary for an injury to his head, and has, within the last

few days, become insane, the cause of the insanity being alleged to be the injury to his head. He is stated to be epileptic, and dangerous to others.

The medical certificates state regarding him, that he suffers from almost complete loss of memory, does not know his own name, the day of the month, or year; he thinks he is only three weeks old, and again that he is 300 years old; he is restless, and occasionally outrageous.

On admission, his bodily condition was bad, and several bruises were observed on different parts of body and head. A day or two after admission his memory had returned, but he was constantly asking to be ripped open.

Nov. 6th.—He is now apparently sane. A large abscess has formed in the left temporal fossa, otherwise he is in good health.

1872. January 2nd.—The abscess mentioned in last entry was opened, and a quantity of pus escaped. Sometimes the discharge was copious, at other times it ceased. Later on another abscess formed over the coronal suture.

He knows everything going on around him, answers questions slowly but correctly. He then began to have epileptic fits, when the discharge from his head stopped, but they ceased on the recurrence of the discharge. Latterly, after the fit he became unable to speak or swallow, but always rallied, until about the 10th of January, when he had fit after fit for a day or two, and died comatose on the 13th.

*Section*.—15th January, 1872, at 2.30 p.m. Temp. 46°. Height, 5ft. 9½in. Rigor mortis slight. An inch and a half above the inner angle of the left eye there was a fistulous opening in the skin covering the frontal bone. Two-and-three-fourth inches above the outer angle of the same eye, at the junction of the frontal and temporal bones, was a second fistulous opening, and about four and three-quarter inches from the first, and an inch above the left ear, was a third opening.

On reflecting the scalp, caries of the bones was observed immediately below the fistulous openings in the skin. A probe was passed through the bone in all of them, resting on a soft membranous-like substance; on removing the calvarium, its inner surface presented three orifices lined by a milky-white membranous structure, the lower orifice being open. The dura mater on the left side was adherent to the brain-substance over its anterior third, and to the membranous structure lining the orifices previously mentioned. On removing the dura mater the pia mater presented much venous congestion.

On section of the left hemisphere, a cavity filled with foetid pus was opened into in the anterior lobe. This cavity was situated anterior to the ventricle, and was about two inches in diameter, and lined by an irregular pinkish membrane. There was no communication between this cavity and the ventricle, but it appeared to communicate anteriorly through the grey matter, dura mater, bone, and scalp. At the back part, and under the left ventricle, another cavity the size of a walnut was found also filled with pus.

The thoracic and abdominal organs were apparently normal.

Weight of encephalon	.....	59 $\frac{1}{4}$ ozs.
„ cerebellum, pons, and medulla		7 $\frac{1}{4}$ „

*Remarks.*—The private history of this man, with which I happened to be acquainted, as well as the character of the caries of the calvarium, left little doubt in my mind that his illness was of a syphilitic origin. At one time in circumstances of comparative comfort, he sunk, through intemperance and improvidence, to the social rank of a pig-sticker. A daughter became a prostitute, and he latterly lived with her in a brothel in Dundee. Whether the alleged blow on the head had to do with the formation of the cerebral abscesses, there is, I think, room to doubt. The perforations in the calvarium had that clear, well-defined, round outline, as if cut out with a punch, so characteristic of “syphilitic caries.” I am disposed to think that the cerebral abscesses had also a syphilitic origin, but whether syphilitic or traumatic, it seems certain that they had existed when the patient had lucid intervals, during which his intellect was almost unimpaired. This may be added to other cases already recorded in evidence, that there may be very extensive destruction of the central white matter of the cerebrum, with comparatively little mental derangement, so long as the grey matter of the convolutions is not materially implicated. Though one of the abscesses in this case had pointed to the surface, the opposing surfaces of the arachnoid had become so glued together as to render escape of the pus into the arachnoid sac impossible. The most interesting fact, however, was that the largest abscess discharged itself externally through one of the perforations in the temporal bone. There was an evident connection between the suppuration and the epileptic seizures: when the discharge was arrested, and the pus probably pent up within the cerebrum, epileptic fits supervened, and conversely a free discharge of pus from the forehead was invariably followed by cessation of the convulsions, and an amelioration of the other head symptoms. It is also worthy of note in this case that, though there was general muscular enfeeblement, the patient never presented any hemiplegia or other distinct paralysis.

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PART II.—REVIEWS.

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*The Methods of Ethics.* By HENRY SIDGWICK, M.A. Macmillan and Co., 1874.

Mr. Sidgwick declares the plan and purpose of his book to be “an examination, at once expository and critical, of the different methods of obtaining reasoned convictions as to what ought to be done, which are to be found—either explicit or implicit—in the moral consciousness of mankind generally; and which, from time to time, have been developed, either singly or in combination, by individual thinkers, and worked up into the systems now historical.” Avoiding any inquiry into the origin of the moral faculty by the simple assumption that it is something under any circumstances which it is right or reasonable to do, and that this may be known, he has endeavoured to expound and criticise from a neutral position, and as impartially as possible, the different methods which have been used to get at this knowledge of “what ought to be done.” The aim of the book, then, is a purely scientific criticism of method, and it is characterized throughout by subtle analysis, precise definition, and scholastic learning. We must confess, however, that our attention has not seldom been prone to wander as we read, for, notwithstanding much originality and freshness in the exposition of the subject, there is a want of method in it which has entailed frequent repetition. A question once dilated upon is apt to come up again and again, sometimes, no doubt, in a new relation, and to be further discussed; the result being to produce a considerable haze of mind and an impatience of attention. Whether the fault be in us or in Mr. Sidgwick’s style, we must confess too that we have often been obliged, even with the best attention, to read sentences two or three times over, in order to apprehend their meaning.

It will be deemed by moral philosophers an ignorant heresy, no doubt, but we cannot help sometimes asking ourselves the question whether there has been any real profit in the elaborate disquisitions which have been put forth respecting the right end which men ought to strive for in life—whether pleasure, or perfection, or virtue, or the greatest good of the greatest number. It is a problem concerning which it might

be said, *Solvitur ambulando*. Will not the time come when, possessed of a mental science founded on the study of the course of development of mind from its earliest beginning in nature to its latest evolution, and upon a thorough knowledge of physiology, men will look upon such disquisitions very much as they look upon the wasted labour of the alchemists now that they have attained to a knowledge of chemistry, or as they looked upon the futile labours to solve the problem of perpetual motion when they had once attained to a sound knowledge of the principles of mechanics. It would be wrong certainly to place the endeavours to discover the *summum bonum* on the same level with the futile experiments made to transmute the baser metals into gold, even though chemistry was much helped into being by the latter. All that it is intended to convey by the comparison is that a great advance in positive knowledge of mind, may, as has happened with other branches of knowledge, open a new and direct road to the goal which men have striven in vain to reach by devious and uncertain paths, and shew their former strivings to be but gropings in the dark.

Mr. Sidgwick might certainly say that he is not concerned with speculations concerning what the future may disclose; the task which he has set himself being to expound and criticise the different methods which have been used to get at the knowledge of what ought to be done. The only question is, whether that aim has been successfully fulfilled. So far as criticism goes, there can be no doubt that it is elaborate and subtile almost to an extreme degree; so far as exposition goes, however, we do not feel so sure of Mr. Sidgwick's success. He does not mark out plainly the distinct track of a method; he is for ever starting off on some bye-path, and proceeds sometimes so far and so eagerly in the pursuit of its sub-divisions, that he hardly seems to get back to the main track at all; and if he does come round to it again, he is sure to leave it at the first opportunity. Thus there is a failure to present a clear idea of what the method is. The channel of the stream is lost, not in a swamp certainly, but in a multitude of small streams. We are apt to come upon such an expression as this—"This leads me to a remark which to some extent qualifies what was said in the preceding chapter;" that is, when we suppose we have done with the subject, we find that the author is incidentally led in a following chapter to a remark which qualifies to some extent what was said in a preceding chapter. Surely the

proper place for the qualification was the place where the argument was stated ; the more so, as it would not then be necessary to re-state the argument, in order to make known how it is to be qualified. In the particular instance mentioned, we lost ourselves in the attempt to find out what actually was the qualification to be made.

Enough, however, of criticism. However sorely the reader's patience may sometimes be tried, he cannot fail, if he resolve sternly to exercise it, to profit by Mr. Sidgwick's careful analysis. It may be hoped that those who in time to come write on what has been, is, or should be the aim of human endeavour, will study his criticisms. They will thus be made familiar with the distinctions which they otherwise might overlook, and will not, like Mr. Lecky, fall into the blunder of mis-stating, or of failing to comprehend, the doctrine of their adversaries, and of then vigorously combating their own misapprehensions. As Mr. Sidgwick remarks, "The difference between the propositions (1) that each ought to seek his own happiness, and (2) that each ought to seek the happiness of all, is so obvious and glaring, that instead of dwelling upon it we seem rather called upon to explain how the two ever came to be confounded, or in any way included under one notion ;" and yet no less a person than Mr. Lecky has failed to make the distinction in the onslaught which he has made upon what he supposes to be Utilitarianism. If Mr. Lecky studies this work, he is not likely, we think, to make the same mistake again, and it is probable he will be made aware of still more subtle distinctions which may not have been dreamt of in his philosophy.

It is obvious that it is not possible in a short space to give a critical review of so minutely critical a book. Were we to begin at the beginning, we should be inclined to question Mr. Sidgwick's right to start with what he calls the simple assumption that there is something under any circumstances which it is right or reasonable to do, and that this may be known. Is not this verily a complex and big assumption ? It is the assumption of the *existence* of a moral sense or faculty, for it assumes a faculty of some kind, which recognises by intuition and makes known what is right or reasonable ; and of its *validity*, for it assumes that it makes known what it is right or reasonable to do ? Let us try to touch solid ground, and, coming down from the abstract to the concrete, ask the somewhat crude, but certainly not irrelevant, question—To whom does it make this known ? to Mr Sidg-

wick, or to the Todo of the Nilagire mountains of Southern India, or to the Bosjesman of South Africa, or to the hereditary criminal of Europe? Mr. Sidgwick would hardly have had occasion to write a book of exposition and criticism of methods of ethics had this faculty really made known to men in times past, or did it make known to them now, what it was right or reasonable to do : for it is a matter on which they have been disputing ever since they began to reflect upon themselves, and with regard to which they have not yet come to an agreement. Can anyone now formulate for mankind what it is right or reasonable for them to do? Pilate asked, not jestingly, as Bacon fancied, but in the spirit of philosophy, "What is truth?" and in the same spirit may we ask, "What is right?" and, like him, we shall wait in vain for a reply. For we should desire to be informed whether it was a sure and immutable formula applicable to mankind in the abstract, to an ideal mankind, or whether it was applicable to the concrete races of men, and if so, to which race, and at what stage of its development? If you say that each race of beings had a notion of right and wrong which influenced its conduct, then we should beg to be informed specifically what that notion was, and how it is related to the notion of right and wrong which prevails amongst the most cultivated individuals of the most cultivated races—whether, in fact, the right of one age is not often the wrong of the next. We object, at any rate, to classing very different things under the same abstract name, and thereupon converting that name into an invariable entity. And we do not think that any discussion of the moral sense, and of the methods which have been pursued to discover its teachings, can be satisfactory which does not take notice of its origin and development. When, for instance, a method of ethics which found favour in the time of Aristotle is contrasted with the latest method of ethics which has been propounded, how is it possible to set forth accurately the comparison, and to do justice to the latter, without taking into account what modern science has taught concerning the origin and evolution of the moral sense? A criticism of the latter which formulates its supposed tendency as Hedonism, or Universalistic Utilitarianism, or by any other scholastic term, abandons the real for the abstract, and is apt to be barren and verbal rather than fruitful and actual. Mr. Sidgwick might probably say, as, indeed, he does somewhere say, that the question of the existence of moral intuition cannot be in

any way affected by inquiries into its origin; that the three questions of existence, origin, and validity of moral intuition are separate, should be discussed independently, and the answers to them sought by different methods. "It seems to be frequently assumed," he says, "that if it can be shown how certain mental phenomena, thoughts, or feelings, have grown up, if we can point to the antecedent phenomena, of which they are the natural consequences, then suddenly the phenomena which we began by investigating have vanished; they are no longer there, but something else which we have mistaken for them: the 'elements' of which they are said to be 'composed.'" That is to say, the moral intuitions have not vanished, because you imagine you have shown how they have originated. The question of existence is entirely independent of the question of origin. The criticism would be just if it were really ever supposed that the phenomena were disposed of as realities when their origin was explained. But we doubt whether so extravagant a supposition is entertained by anybody. The argument is not that, but this: that the question of origin goes to the essence of the two other questions of existence and validity—is an essential part of the question of their existence *as intuitions*, and of the question of their validity as such. No one supposes that they are *not there*, because it has been shown how they have grown up; but many persons think that our knowledge of *what they are*, if there, must depend very much upon what is discovered concerning their origin and evolution.

Putting aside this difference of opinion with regard to the extent of bearing of the question of origin, Mr. Sidgwick might still say that he is not greatly concerned with the fact whether the simple assumption with which he starts is true or not. It is sufficient for him that it has always been made, and that, the methods of ethics having postulated it, his purely scientific exposition and criticism is nowise affected by its truth or falseness. But we cannot think so humble a claim, which puts his dissertations on a level with dissertations concerning phlogiston before oxygen was discovered, would be just to his work; it might have been so had he contented himself with a simple exposition of methods, and written it as an introductory chapter instead of an elaborate book; but the wealth of acute criticism and subtle analysis would be wasted except for his evident conviction that moral intuitions, apprehensions, or sentiments exist in the human

mind, have a fixed character, and are valid. Having that conviction, is he justified in passing over altogether a question which bears essentially upon the questions of existence and validity—the question of origin?

Our intention to have done with criticism has led us into further criticism. We began by finding fault with the exposition because it deviated into so many byepaths; we have now been finding fault with the criticism because it makes implications for which it does not furnish proper warrant. All the while it is possible that our objections have been anticipated and answered in one part or other of the work. Readers should do what we did not—study the table of contents at the beginning of the book before reading the chapters. They will thereby get a clearer idea of the author's argument. It would have been well perhaps if the summary of the contents of each chapter had been placed at the beginning of it. Whatever else may be said of Mr. Sidgwick's book, it will not be denied that it contains much subtile thought, and is deserving of earnest study.

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*Lux e Tenebris; or, The Testimony of Consciousness. A Theoretic Essay.* Trübner & Co. 1874.

A book which proclaims itself by its title to be a "light out of darkness" makes a pretension which is not suited to disarm criticism. The title is, however, the most pretentious part of a book which is not written in a spirit of pretension. The author has had in his mind for thirty years the project of enunciating the reflections which he has now set forth, and, whatever may be the fate of his book, "will never regret the time and labour he has spent on its production. . . . It has beguiled many a dull hour, soothed many an anxious one; and he parts with it now as he would from an old friend with whom he had passed many years of his life." He has the modest hope, however, that it may be of assistance to some, in directing and helping them on the way they should go, though he cannot expect that among these will be included the cultivated class of cynics and sceptics.

There are also the more cultivated class of cynics and sceptics, who ask, with the polite Roman governor, "What is truth?"—who believe that right and wrong are accidents; reason and wisdom, names; goodness and virtue, dreams: they see the darkness, but do not believe in the existence of light. With these the author has no quarrel; their

eyes are at any rate open, and if he fails in making them see, the fault will not be theirs. To convince them he can scarcely expect ; all he asks of them is to pardon his weakness in believing that "there may be words which are things—hopes which will not deceive ;"—that "Goodness is no name, and Happiness no dream."

We doubt not that the cynics and sceptics will pardon him, if they do not envy him, this amiable belief.

What then is his story ? It is the old one : consciousness the light of the world. This is the light which, notwithstanding its failures in the past, is to lighten our darkness, and defend us from all the perils and dangers of thinking. He begins his first chapter with enunciating a series of ten propositions with regard to consciousness, scarce one of which we should accept entirely in the sense in which it is propounded. It is laid down, first, that all existing things are divisible into two classes—those that do, and those that do not, manifest consciousness ; secondly, that consciousness is the one essential attribute of mind, it being impossible to conceive consciousness without a mind to which it belongs, or mind without the property of consciousness ; and, thirdly, that consciousness and knowledge are convertible terms, for there can be no consciousness without knowledge of such consciousness, nor can there be any knowledge without consciousness of such knowledge. It is consciousness which tells us we know, and knowledge which tells us we are conscious ; and they are not two things, but one thing. Is this so ? Can any one at any given moment call to mind, that is, to consciousness, one thousandth part of what he knows ? It will be replied that this latent knowledge, or whatever else it may be called, is not *real* but *potential* knowledge, a possibility of knowledge, that is, something which can be knowledge when it becomes consciousness. Well, but what is it actually when it is not conscious ? Potential knowledge is merely a verbal expression describing what may be ; we want to know what that is which we can know at any moment when it becomes conscious, which is not known until then, and where and how it exists meanwhile ? The author's answer is that it exists in memory, but he does not tell us as what, only says as knowledge that may be. Where, then, does memory exist, we ask ? In the mind, it may be presumed the answer will be, seeing that we cannot well have mind without memory. So, then, we have potential knowledge laid up unconscious in the mind. But by the second proposition it appeared that there was no consciousness without mind, and no mind without conscious-

ness. *Ergo*, the potential knowledge cannot be in the mind, for it would then be conscious, that is, actual; nor can it be in memory, for memory is a function of mind, which cannot be unconscious either in its essence or function. Here, then, we are brought into a quandary: our potential knowledge is logically nowhere and nothing, though we still cannot but think that in nature it is somewhere and something. This comes of disquisitions in which vague words do duty for facts, and of a so-called philosophy in which it is not insisted that thoughts shall be in definite accordance with facts, and that words shall exactly define thoughts.

The vagueness and unreality of the three propositions which we have quoted as a sample of the rest, might be exposed over and over again by bringing them to the test of facts. We will give one more illustration. All existing things are or are not conscious; consciousness and knowledge are identical; therefore all existing things that have consciousness have knowledge. Is that true? Apparently not: the author himself admits that there are beings low down in the animal scale which possess sensation, and, therefore, he says consciousness, but which have neither knowledge nor memory. And yet he leaves his fundamental propositions unaltered, and goes on his way rejoicing, to elaborate a system of philosophy founded upon them! Were he to supplement his interrogation of consciousness by a sincere and competent interrogation of nature, we doubt not that he would discover the necessity of making other qualifications of his propositions.

The argument which he uses to prove that the seat of perception is not in the brain, but in the "unknown essence, mind," may be quoted to show how far he is from sounding the depths of his subject. It is this: "Neither is it situated within the body; for this is contradicted by the direct testimony of consciousness, which represents it as differently placed with regard to the body. It follows that both it and the body, as perceived in consciousness, are situated in the mind." Certainly it is a new discovery that consciousness informs us, by its direct testimony, how its states are placed with regard to the body, or how the brain is placed with regard to the body. Does it in fact give any information at all concerning the whereabouts of mind and brain in relation to body? So far as we understand the author's vague and somewhat obscure statement, it is that consciousness tells us that the perception is differently placed (differently from what?—the brain, we presume) with regard to the body, and

that it follows that it is in the mind. But it is an indisputable fact that consciousness tells us nothing about the brain ; and that, were we dependent upon its testimony alone, we should not know that we have brains. What possible warrant is there then for declaring that consciousness tells us what is or is not in the brain ? Perception may or may not be in the brain, but whether it be or be not, it is certain that so long as consciousness knows nothing of the existence of a brain and of the changes that take place in it during mental function, we cannot appeal to its authority to decide what the functions of the brain are, and what is their limit. Assuredly it would be absurd to assert that what consciousness does not make known to us cannot have any existence. This, however, is what is virtually done ; an entirely unwarrantable conclusion as to the impossibility of perception by the brain is founded on the incompetence of consciousness ; and thereupon an extraordinary *sequitur* is made which is no *sequitur* at all—namely, that it must be “differently placed with regard to the body,” and be situated in the mind.

Whether perception be situated in the mind or brain is a question concerning which, it has always seemed to us, disputation will cease so soon as men have come to a clear and definite understanding of what they mean by the words they use. Mind, including consciousness, is a function of brain, say the so-called materialists ; whether perception is in the brain or mind is a quarrel over words rather than over things, being really a part of the question whether it is ever right to say that the function is in the organ. The function is unquestionably *potential* in the organ, but when it becomes actual in consequence of material changes in the latter, can we any longer describe it correctly as being in the organ ? If we can, then perception is in the brain ; but if not—if the function is an energy which has gone forth from the organ and is not any longer part of it—then perception is properly part of the function, mind, and may be said to be in the mind ; mind being the abstract term in which we include all the mental functions of the brain. We know nothing of the organ and its changes by consciousness ; the knowledge which we do get through its revelations is confined to function ; wherefore it is so far true that we only know mental states in consciousness. But it is a long and gratuitous leap thence to the unnecessary hypothesis of an “unknown essence, mind,” which is something distinct both from function and organ.

It is a larger leap still which the author makes, when he

attains to the notion of the mind as “a void or hollow sphere, outside and in immediate contact with which is the material brain, and beyond this again the person and things of the material world, with which the brain is connected by nerves distributed throughout the body. Of the nature of this sphere we know nothing : all our knowledge is confined to its contents ; and these are the conscious being itself—the psyche, and the various phenomena of which it is conscious. Comprehending, so to speak, these phenomena, the mind does not comprehend itself : it exists outside the sphere of consciousness, of which, in fact, it forms the limitation.” Such is philosophy which has undergone a thirty years’ gestation ! How the author reached it, as he professes to have done, through the analysis of his facts of his consciousness, passes our comprehension. Certainly his consciousness must be an extraordinary one, if it has really revealed these things unto him through self-analysis. He claims for the hypothesis that, among other merits which it has, it reconciles the realist and the idealist, and that it is a bulwark against materialism with all its desolating consequences ; and he demands that, if unsound, it shall be refuted rather than ridiculed, for “ridicule is not refutation.” Will he forgive us for saying that there are some hypotheses which are too ridiculous for serious refutation ?

In the foregoing criticism we have been concerned entirely with the author’s philosophical theories, which we believe to be neither so sound nor so important as he imagines ; in taking leave of his book, we may express our agreement with many of the moral reflections which occupy a great part of it, are expressed in a clear and attractive style, and may be read and appreciated without reference to his philosophical theories.

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*System of Positive Polity, or Treatise on Sociology, instituting the Religion of Humanity.* By AUGUSTE COMTE. First Volume.

We have been pleased to see the announcement of the forthcoming publication in English of Comte’s works, and gladly welcome this first instalment, excellently well translated by Dr. Bridges, Inspector of the Local Government Board. Other translations are to follow by others of the small but distinguished band of Comtists in this country

—Mr. Congreve, Mr. Beesly, and Mr. Frederic Harrison. When the series is completed, the result can hardly fail to be to convince Englishmen that Comte was not the crack-brained fanatic which so many of them imagine him to have been. We say “so many of them,” but in truth the so many who know anything at all about him are very few; and it is probable that if his name were mentioned in the hearing of the brewers, shipowners, bankers, gin distillers, and all kinds of rich people, who constitute so large an element in that body, which, with insular and vulgar arrogance, fluent penny-a-liners, and even some members of it whose imaginations reach no higher than the penny-a-lining level, declare to be “the first assembly of gentlemen in Europe,” they would be moved to exclaim—Who was the fellow? And if it were answered unto them, that he was a philosopher, who thought it a nobler aim of life to pursue wisdom than to accumulate vast wealth by brewing beer, distilling gin, or sending unseaworthy ships to sea, it is not to be doubted that his character would be clean gone in their minds, and that he would be deemed no better than a visionary fool.

The sober-minded Englishman who reads the remarkable dedication of this volume, is not unlikely to be frightened from proceeding farther in its perusal. It is—“To the sacred memory of my eternal friend Madame Clotilde de Vaux, who died in my presence the 5th of April, 1846, at the beginning of her thirty-second year. Gratitude, regret, resignation,” who is addressed as “Noble, tender hearted victim.” And it concludes with the following paragraph:—

Farewell, changeless friend! farewell, my saint Clotilda, thou who wert to me in the stead of wife, of sister, and of child! farewell, loved pupil, true fellow-worker! Thy angel influence will govern what remains to me of life, whether public or private, ever urging me onwards towards perfection; purifying feeling, enlarging thought, ennobling conduct! May this solemn incorporation into my whole life reveal at last to the world thy hidden worth! Thus only can thy benefits now be recognised, by rendering my own performance of the mighty task before me more complete. As the highest personal reward for the noble work that yet remains to be done under thy lofty inspiration, it will be granted perhaps that thy name shall remain ever joined with mine in the most distant memories of grateful humanity.

*La pierre du cercueil est ton premier autel.*

He laments that the sacred union of their hearts was only for a year, “our sacred year of happiness.” Perhaps the

brevity of the felicity was not altogether a misfortune; had it lasted for ten years, it may well be doubted whether he would have written of her in such a strain of what we cannot help calling infatuation. Familiarity, as its habit is, might have bred a weariness if not a contempt in one who through life shewed little of the spirit of self-renunciation. The samples of her literary productions which are given in the appendix to this volume do not seem to warrant the extravagance of reverence and gratitude which Comte expresses for her. And we must confess that, notwithstanding our admiration of Comte's services to philosophy, there is to us something nauseating in the idea that in the most distant future ages Clotilde de Vaux shall be worshipped as a saint in the religion of humanity. It was hardly worth while to dethrone the Virgin Mary in order to enthrone Madame Clotilde de Vaux.

Let not the reader, however, be too swift to judge the character of the treatise from its dedication. Comte may have been mad at one period of his life—was indeed confined for a time as a lunatic—and may have been infatuated unto the end of his days, but no one who is qualified to give an opinion can question the important services which he has rendered to the intellectual progress of mankind, or doubt that his reputation will grow greater in the time to come. We are too near him yet to judge him fairly; and as we must get some distance away from a mountain in order to perceive its height, so it will be necessary that he should recede some distance into the past before his height in relation to his contemporaries and to the great men of preceding ages can be justly estimated. It is impossible to open this volume at random, and to read five consecutive pages, without acknowledging the wide and powerful grasp of thought displayed in it, and without feeling that we have to do, not with a transitory work of barren criticism and attenuated exposition, but with a profound work of philosophical construction which, whether right or wrong in its doctrines, will live long after the men of this generation shall be "green in death, and festering in their shrouds." Assuredly Comte's treatises are now an essential and important part of the history of philosophy, and ought to be carefully studied. We are glad, therefore, that his disciples in this country have resolved to make them more accessible to English readers. The task was almost incumbent on them as an act of justice to their great master, who has not

received the acknowledgments which were his due from some of those who have profited largely by his labours.

We are unable on this occasion to enter into a full review of the work before us; the labours of life leave so little time to live; but we cherish the hope of being able at some future period to place before our readers an account of Comte's life and works. For the present it must suffice to state on what basis this work stands:—"Its object being in accordance with the essential purpose of true philosophy, to systematise human life as a whole on the principle of the subordination of the intellect to the heart. . . . After frankly devoting the first half of my life to the development of the heart by the intellect, I saw its second half consecrated to the illumination of the intellect by the heart, so necessary to give the true character to great social truths. But how could I hope for these new inspirations unless I had myself experienced the full strength of that feeling which is most powerful to raise man from his primal self-absorption, by deriving its highest happiness from another?" By a happy coincidence he became acquainted with Clotilde de Vaux, and had these strong emotions awakened at the very moment when his new work demanded personal experience of tender feelings. Thus she became the agent of his moral renovation, without which his mission must have remained incomplete. Looking at the matter from Comte's stand point, one cannot well help sliding into his conclusion. He was an organ of humanity, whose function it was to do a great philosophical work; half this work would have been abortive, had it not been for the tender feelings aroused in him by Clotilda; his love for her inspired him to the full accomplishment of his mission. Was she not then truly his Saint Clotilda, whose name shall justly be joined with his in the most distant memories of grateful humanity? The answer will depend upon the value of the work of the second part of his life. And that is the question.

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*Heredity: A Psychological Study of its Phenomena, Laws, Causes, and Consequences. Translated from the French of Th. Ribot. HENRY S. KING & Co., 1875.*

On a former occasion, we noticed with praise M. Ribot's work entitled "Contemporary English Psychology," and we are happy to think the present work equally deserving of praise. The author displays the same gratifying acquaint-

ance with the works of English writers which his former work evinced, and he has the advantage of a subject information concerning which will be more profitable to English readers. It might be interesting and useful to Frenchmen to have a lucid and concise abstract of the writings of Messrs. Mill, Bain, Lewes, Spencer, and Bailey, but it is natural to suppose that those of their own countrymen who were interested in philosophical questions, would study the original works of these authors. This is not so with the subject of "Heredity." So far as we know, there is no complete work upon the subject in the English language; nothing at all certainly to be compared with the excellent *Traité Physiologique et Philosophique de l'Hérédité Naturelle*, by Dr. P. Lucas, which was published many years ago in France. It is strange that the valuable materials contained in that treatise should be so little known as they are in England. However, the doctrine of Darwinism, for which it did something to prepare the way, cannot fail eventually to make it better known. M. Ribot's work incorporates the results of Darwin's researches, as well as those of Moreau, Morel, and others in morbid psychology, and so goes beyond the level which Lucas was able to reach at the time when he wrote.

The physiological side of the question of heredity has been diligently studied, but not so its psychological side. It is this deficiency which the author proposes to supply in the present work. It is a study of the hereditary transmission of mental faculties, considered in its phenomena, its laws, its consequences, and especially in its causes; this study being preceded by a brief account of what is known of the phenomena and laws of physiological heredity. In the first part of the work he treats of the heredity of instinct, of the sensorial qualities, of memory, of the imagination, of the intellect, of the sentiments and passions, and of the will, as also of heredity and national character, and of morbid psychological heredity. In the second part he discusses the laws of heredity, direct and indirect, and considers the exceptions to the supposed laws. The third part is devoted to an exposition of the general relations between the physical and the moral nature, and points out how the doctrine of psychological and physiological heredity bears upon the elucidation of these relations. The last part deals with heredity in its relation to the law of evolution, and sets forth the psychological, moral, and social consequences of heredity. Readers will perceive, from this brief summary of contents, what varied, abundant,

and attractive fare is provided for them ; and when we add that facts and opinions are brought together from all quarters, and methodically dealt with in a clear and vivid style, which will carry them on without much weariness through the perusal of the book, we have said all that we need now say in its favour. It was not easy, perhaps, to avoid repetition in such a treatise, and some vagueness of disquisition was unavoidable, where a solid basis of well-observed facts has not yet been laid, and where conjectures must often do duty for well-grounded inferences. But how few books would be written if men, forbearing to enunciate hypotheses, were to wait patiently until they had attained to certain principles ! The translator seems to have done his work well.

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*Selections from the Writings of Berkeley ; with Notes and Introduction, by ALEXANDER CAMPBELL FRASER, LL.D. Clarendon Press Series. MACMILLAN & Co., 1875.*

Both those who have, and those who have not, read Bishop Berkeley's philosophical writings, will thank the editor of this volume for the admirable selections which he has made from them, as well as for the introduction and copious notes with which he has enriched it. It is to be hoped that it may be the means of introducing many persons to the study of Berkeley's works. His easy, elegant, and singularly lucid style, affords an excellent model for imitation by those who desire to express deep thoughts on abstruse subjects in chaste and graceful language, while his philosophical doctrines cannot fail to be instructive for generations to come. It is hardly necessary to add that the editor has done his work well. We strongly recommend the volume, which is convenient in size, easy to handle, does not require cutting, and is printed in good type.

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### PART III.—PSYCHOLOGICAL RETROSPECT.

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1. *Insanity and Hospitals for the Insane, Public and Private, in Ireland, in 1873.*

The Irish Blue-book for 1873—the twenty-third Report of the Inspectors and Commissioners of Control of Irish Asylums for the Insane—forms the first of what bids fair to be a much improved series of these interesting annual records. The improvement consists in the more systematic arrangement of the information regarding each of the twenty-two district Asylums, as well as the Central Asylum for

Criminal Lunatics at Dundrum near Dublin. The history and present condition of each of the twenty-three public institutions is given, with commendable fulness, and we have no doubt that future reports—when the Inspectors get accustomed to the new style—will contain information as complete as could be wished for.

If all three “blue-books” in connexion with the insane in these kingdoms could appear as nearly as possible at the same time, it would be most desirable, so that our readers might have a *resumé* of the state of insanity in the whole length of the United Kingdom at once. Owing, however, to the lateness of issue of the report before us, it is only now we are able to give the total number of those who, at the end of 1873, were registered as “persons of unsound mind,” and were resident in public institutions or private asylums in Great Britain and Ireland—namely, 72,496. The total for the three kingdoms at the end of 1872, was 70,054. Their distribution each year was as follows :—

In Public Institutions or Private Asylums.	Remaining at the end of	
	1872.	1873.
In England and Wales ... ..	52,803	54,752
In Scotland ... ..	6,295	6,418
In Ireland... ..	10,956	11,326

These numbers do not include those found insane by inquisition, nor the private single patients nor “out-door paupers” enumerated by the English Commissioners; nor those resident in private dwellings, although “under official cognizance” of the Scotch board; nor the “Insane at large” enumerated by the Irish Inspectors. It is necessary to exclude all these from the respective totals, in order to institute a fair comparison between the three countries, for each board has special facilities for registering certain classes not taken notice of by the others. For example, the Irish board is enabled to give a very complete list of all the “insane at large,” dividing them among three different grades of society, the upper classes yielding 117, the middle 2,046, and the lower 4,818, all enumerated by the Irish County Police in their respective districts—men trained in a special manner for the collection of statistics, at the compilation of which they are kept busy when not employed in the detection of crime or the suppression of Fenianism. There is no force of corresponding character or proportions in either of the other two countries. If, for instance, the English County Police had a similar duty to perform, we would doubtless hear of more than 6,839 insane poor residing with relatives or friends in

the whole of England and Wales. The incompleteness of such an enumeration will be apparent by placing it alongside the similar one for Ireland, namely, 4,818, the proportion between the estimated general population of the two countries at the end of 1873 having been about  $23\frac{1}{2}$  to  $5\frac{1}{3}$ .

The distribution of the "registered insane" in Ireland, at the period referred to, was as follows:—

In the 22 District Asylums	- - - -	7,347
In Dundrum "Criminal Asylum"	- -	160
Supported by Government in the Mixed		
Institution near Lucan	- - - - -	25
		<hr/> 7,532
In 18 Private Asylums	- - - - -	314
In 4 Mixed Institutions (corresponding to		
the Registered Hospitals of England)-		350
		<hr/> 664
Total in the 45 Public, Private, and Mixed		
Asylums	- - - - -	8,176
In Union Workhouses	- - - - -	3,130
		<hr/>
Gross Total	- - - -	11,326
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The Inspectors are of opinion that insanity is certainly not on the increase in Ireland at present, but they seem to anticipate a gradual addition to the numbers in asylums owing to the increase in drunkenness, which in their view does not *primarily* cause genuine insanity. They throw out a hint that cases in which the disease of the brain has not gone so far as to affect the mind, are mistaken for cases of insanity among habitual drunkards. But whatever doubt there may be as to the vice referred to producing insanity in the individual himself, there can be none, they say, as to its giving rise to the insane or other cachexia in his offspring. It is, therefore, our duty to check "as far as human means can, the propagation of mental disease, which is so hereditary in its character." We shall be glad to learn from the Inspectors if they have any practicable scheme to offer the legislature by which we can deal with dipsomaniacs as we do with the ordinary class of insane persons, and thus secure to society at large "indirect but certain benefits." This is, in our mind, one of the foremost social questions of the day, and we would gladly have laid before our readers any suggestions from the Inspectors which might tend to its solution. We hope they will return to the subject.

The admissions into the District Institutions during the year amounted to 2,277, the new cases numbering 1,849, and the relapsed cases 428. It is satisfactory to learn from the Inspectors that the attention of the Government has been drawn to the "inconveniences"—they use an altogether too mild a term—which are attendant on the

abuse of the powers vested in magistrates by Lord Mayo's Act. This act will be no credit to the statute book as long as it remains unrepealed, and we hope that some of our Irish brethren will bring it under the notice of the Association at this year's meeting in Dublin. Nothing can be more repulsive to our modern ideas than sending a poor creature afflicted with disease under *police escort* to an hospital. The number thus admitted in 1873 (under the name of "Dangerous Lunatics," but treated in their transit as if criminals) amounted to the enormous total of 1,226. It says little for the patriotism of Irish Members that they do not take steps to obtain a repeal by the Government of this Act. If Jane Smith becomes the subject of the physical disease termed insanity, she is quietly taken in a fly to the county asylum, accompanied by the relieving officer and a female nurse. If, however, poor Biddy O'Callaghan becomes the subject of the same disease, she is given into "custody" to two police constables in uniform, with their bayonets hanging from their belts, placed on an outside jaunting car, and driven through the streets, it may be, of a populous town to the district Hospital for the Insane, to which she is "committed" as a "dangerous lunatic." And how injurious, too, must such a spectacle be to the poor inmates who can see a car such as we describe passing the windows of their day-room! We can easily imagine one whose mind has begun to resume its functions, asking herself—"Was I brought here by the police, like that?" That the evil is of great magnitude, warranting our dwelling on it so long, will be granted when we state that the report before us shows (v. p. 190) that in the year 1873 no less than 102 of the women admitted into a single asylum—the metropolitan one in Dublin—had to pass through the streets of that city under *police escort*! Why should Irish Biddy be thus treated as if she were a criminal, while English Elizabeth, when affected in an exactly similar way, is taken to the county asylum as decency suggests and humanity commands? Let every nationalist M.P. keep on asking and asking again this question in the House of Commons, till the Act 30 and 31 Vict., c. 118, is erased from the statute book.

We observe that the Inspectors have omitted to give two tables of considerable interest which appeared in their report for 1872. We allude to those showing the time relapsed cases had been absent previous to their last admission and subsequent to their discharge as "recovered." We may here remark that, excluding transfers, the relapsed cases were in the proportion of 18·88 per cent. of the total number admitted in 1873. The proportion in England was 14·83 per cent. during the same year in the public asylums.

The recoveries during 1873 in the Irish District Hospitals were more numerous in proportion to the admissions than was the case in either England or Scotland. The ratio in each country was as follows:—In England, 33·95 per cent.; in Scotland, 41·41 per cent.; and in Ireland, 45·27 per cent. of the admissions. We are sorry to

find the Inspectors advocating the calculation of recovery percentages on total numbers under treatment. Such a method would be obviously unjust to the older institutions; for the longer an asylum is in existence the larger must be the residue of incurable, or more correctly chronic cases. No one who has the most superficial acquaintance with the subject of insanity statistics could be guilty of the "fallacy" they refer to "of supposing that the recoveries had taken place exclusively among the admissions." The great object we aim at in deciding on the method of calculating percentages is the avoidance of the greatest error. The question was exhaustively discussed by the Association's Committee appointed for the purpose, and the conclusion arrived at was in favour of the method now almost universally adopted, involving as it does less error than any other. We hope the Irish Inspectors will lend us their valuable support, as have already the English Commissioners, in endeavouring to get the statistics furnished by *all* public asylums drawn up in a similar manner. It is a pity that Ireland has remained so long the "silent sister" in this respect. We feel sure, however, that if the Inspectors were to append to their next blue book a copy of Appendix K of the English Commissioners' Twenty-second Report, and suggest the adoption of the forms therein contained for the annual tables published by each district asylum, there would hardly be found a single superintendent who would object to the additional labour involved in such a contribution to science, onerous though their ordinary duties are.

The mortality during 1873 in the district asylums was low, being only at the rate of 9·86 per cent. of the average numbers resident. The proportion in England in the public asylums during the same period was 10·70 per cent. In Scotland it was only a little over 8½ per cent. If, however, we calculate the ratio on the total number under treatment during the year, the percentages will be:—For Ireland, 7·06; for England, 8·31; and for Scotland only 6·21. In the Cork District Insane Hospital there seems to be a singular idea of the meaning of the term "Death from natural causes." Last year we remarked on the inconsistency between the figures given in two of the blue-book tables, owing to this peculiar mode of interpretation. The same thing has occurred again in the present blue-book, and in a similar way. At page 183 the Cork establishment is not credited with any deaths "from accidental causes;" whereas at page 201 three deaths are set down as having arisen from "accident, violence, or suicide." And yet at page 37 the Inspectors thus say, decidedly:—"We are happy to report that no death occurred through accidental or violent means during the year, which is all the more gratifying taking the crowded state of the asylum into consideration, and many of the patients having suicidal and dangerous tendencies." Do they still look upon "nervous decay" in Cork as a cause of death to be classified with "accident, violence, or suicide?" If so, it would be advisable to get the heading in the table altered. However, we

may take for granted that no suicide took place in the Cork District during 1873, and thus we arrive at the fact that only six out of the 665 deaths were due to casualties. All of them were males. One fell accidentally out of a window, four committed suicide, and one was strangled by a fellow patient during the night in a six-bedded dormitory, which had a window of communication between it and the attendants' room.

We observed at the commencement of this review that the report before us was drawn up in a fuller and more systematic manner than previous ones. This improvement we owe to Earl Spencer, who during his Viceroyalty took the greatest pains to go minutely into every matter affecting the well-being of the insane, and was obviously impressed with the responsibility of the duty devolving on him as head of the government in Ireland. No official is vested with similar power in England as regards the insane and those connected with their care. The system commends itself in many ways, and it might be well for us on this side of the Channel if our machinery were assimilated. Earl Spencer seemed to have as one of his guiding principles the advantage to the insane of having everything connected with the government of the institutions for their treatment as fully as possible understood by the public. One evidence of this was afforded by his issuing a minute to the Inspectors directing them in the annual reports furnished to the Viceroy to give specific information regarding each of the twenty-two district asylums under the sixteen following heads:—

State of the Asylum.	Classification.
Accommodation.	Diet.
Admissions.	Officers.
Discharges.	Expenditure (showing cost per head).
Deaths.	Books and Accounts.
Recoveries.	Attendance of Governors (who correspond to English Visiting Justices).
Employments.	General Observations.
Amusements.	
Religion.	

The Inspectors are, therefore, now officially called upon to notice everything of importance connected with the history or management of such institution during the year. Official records of considerable value will thus be annually published of a most comprehensive kind, and at the same time easy of reference. The Inspectors, much to their credit, have shown in this their first report, drawn up according to the above plan, that they are anxious to carry out the instructions of the Lord Lieutenant, not only in the letter but also in the spirit. They allude very prominently to the advantage that would accrue to district asylums generally, if the Governors showed a greater readiness to act on the suggestions made from time to time by the Medical

Superintendents on matters of detail connected with the internal economy of such place. Their advice may be summarized thus:—Give the Superintendent anything in reason he says is necessary for the proper working of the institution, and hold him accountable then in the fullest way if things do not go on smoothly. The bearing of the advice will be better understood when it is remembered that the appointment of an Irish Superintendent is held direct from the Crown, and is made by the Lord Lieutenant himself without any consultation with the Local Board. The latter have power neither to increase (except by recommendation) nor diminish his salary nor allowances, nor can they refuse to grant him a pension, the provisions of the Civil Service Superannuation Act being mandatory in that respect. The new code of Privy Council Rules—which came into operation on the 23rd of February, 1874—makes the independence of the Superintendent quite unmistakable. That official must be present during the Board's entire meeting, for by the 36th Rule he is held responsible for the "accuracy" of the records in the "Minute Book." Another rule in the same code indicates that if a Superintendent looks forward to an increase of salary he must be in the good graces of the Inspectors as well as of his Board, the wording of the clause being as follows:—

It shall, however, be lawful for the Lord Lieutenant in Council to increase the salary of any Resident Medical Superintendent who may have served *eight years* in any asylum to the satisfaction of the Board of Governors, upon the recommendation of such Board *and of the Inspectors*; such increase not exceeding in any case £100 per annum.

This progressive increase in proportion to length of service is a step in the right direction, and has but one fault, namely, the long time a man will have to wait for it. Why should it not be with Asylum Superintendents as with officers in the medical departments of other public services—the navy and army, for example—who get their salary increased at the end of *five* years? However, there is ground for our congratulation of our brethren in the Sister Isle for even this concession to what the Inspectors themselves designate the "claims of Resident Medical Superintendents."

We hope that many other claims of the Irish Superintendents will be urged with the same vigour by the Inspectors who, it is but justice to remark, seem anxious to do what is fair and right by those whose cause they have lately been advocating with some success. We have only space at present to draw attention to two of the most urgent of these claims as they occur to us reading with English spectacles "through the lines" of the report. It seems to us that for the benefit of the insane poor of Ireland the Inspectors ought to urge upon the Government (1) to make it compulsory on Boards of Governors to appoint an Assistant Medical Officer in every asylum having more than two hundred beds, who may very well take the place of the "Visiting Physician," according as vacancies in the

latter ornamental office occur, and (2) to grant pensions to the staff on a similar scale to that sanctioned by Act of Parliament in England.

To the first of these claims we have referred in former reviews of the Inspectors' blue-books, and only now recur to it because the new code of rules furnishes a strong argument in its support. We would here remark that the Rules are equally applicable to all district hospitals for the insane in Ireland alike, whether they have an Assistant Medical Officer, or—as in the case of the one for the counties of Tyrone and Fermanagh with its 510 beds and seventeen other district asylums—the only resident medical officer is the Superintendent. There are forty-eight County Asylums in England, and of these there are only two without an Assistant Medical Officer, and which are held up by the Commissioners in Lunacy as being thus very objectionably circumstanced. Out of the twenty-two similar institutions in Ireland there are eighteen without one.

By referring to the new Code of Rules we find that in addition to his ordinary duties as Medical Superintendent the Resident Physician of an Irish Hospital for the Insane is required to—

(1.) Issue summonses for board meetings. We see that in several asylums the number of Governors is over thirty. In two, at least, they number forty-five.

(2.) Send to the Inspectors within four days of the meeting “a full and accurate copy of the minutes” of every Board's proceedings.

(3.) Certify to the accuracy of the quarterly accounts and estimates of expenditure and of all money demands.

(4.) Submit to each Board—the Governors meet every month as a rule—calculations as to the proportionate number of vacancies to which each division of the district is entitled.

(5.) Send to the Inspectors a copy of each such return.

(6.) Make all entries in the General Register for Admissions (*vide* Rule 21).

(7.) Take the responsibility of making agreements as to amount to be paid by friends towards maintenance of each paying patient.

(8.) See that all the accounts of the Institution are kept in accordance with the regulations of the Inspectors.

(9.) See that bills, &c., are regularly prepared and submitted to each meeting of the Governors.

(10.) See that the correspondence of the Board is duly attended to.

(11.) “Be responsible for the disbursement of such money as may be placed in his hands by the Board” (*vide* Rule 38).

(12.) See to the repairs of male patients' clothing, and issue written orders (to be filed) when any articles are required from the store in lieu of bedding, linen, &c., condemned on the male side (*vide* Rules 78 and 85).

Not one of the above duties is ever imposed on the Superintendent of an English County Asylum. We cannot understand why Irish Superintendents should be called on to perform them. There are none of them which a Clerk and Steward could not attend to, and thus enable the Resident Physician to devote his time and energies to the treatment of the cases in the “hospital.”

We observe with much satisfaction the frequent use of the term “hospital for the insane” by the Inspectors to designate the public

institutions under their authority. It is to be hoped that they will lend their valuable aid towards getting them made so in reality as well as in name. This they can do by making the appointment of an Assistant Medical Officer compulsory, and lightening the *office* duties of the Medical Superintendent as much as possible. The salary of an Irish Superintendent with 500 patients to look after should be considerably larger than that of one in England having a like number of patients under his care; for in the latter case responsibility and anxiety during temporary absence for any relaxation are taken off the mind by the knowledge that there is another medical man on the spot ready for any emergency, while in the case of the former, if his heart be in his work, he can never feel the same enjoyment while outside the bounds of his place that an English Superintendent can. Again, our Irish brethren have actually pecuniary responsibility—a thing unknown in English County Asylums.

But if the Treasury cannot afford to give equal salaries to the physicians holding similar appointments in the two countries, surely they ought to make the period of service for pensions similar. It is hardly credible, and certainly not creditable, that the Irish Superintendent should have to serve forty years (!) before he can get a retiring allowance in the same ratio to salary as can be obtained in England after fifteen years' service. This is a real grievance, and one which we have little doubt would be redressed if the Inspectors were supported by—as we are certain they would—a strong representation of their case on the part of the Superintendents. It is but justice to the Inspectors to say that they have hitherto shown an anxiety to promote the welfare of asylum officers; and, therefore, we have the less hesitation in looking forward to an early removal of this most unfair and unreasonable anomaly. The Inspectors know full well the wearing and distressing nature of the duties that devolve on an Irish Superintendent; how constantly his mind is distracted, or made anxious by an infinity of worries inseparable from his position, and what a risk is run of his own mental powers being affected if for any great number of years such tension is kept up. The contrast between the work done in ten years by a man in such a position, and that "got through" by a civil service clerk who spends perhaps eight hours, at the most, in his office each day and then is perfectly free, seems so remarkable that the wonder is the law has remained so long unrepealed which places them on an equal footing as regards time counting for pension.

The new *Code of Rules* (which, as we have already mentioned, came into operation last year) has disappointed us, we confess, in many particulars. Rule 32 is, in our opinion, a great mistake. We cannot express our views on the point involved in the latter part of the rule better than in the words of a Commissioner of extensive observation, who thus wrote in 1867 :\*—

\* See p. 75 of Dr. Manning's Report.

On examining closely the general condition of asylums, those are almost always found to be best managed in which the resident physician is the Superintendent, one and supreme; in which the Committee of Visitors act only through him and with his advice, and in which the appointment and *dismissal* of all attendants are delegated to him; and those are found to be the least satisfactory in which the responsibility is divided, in which the Committee of Visitors or controlling *Board meddle in the internal management* of the institution, and direct, themselves or through other officers, any part of it, appoint or dismiss attendants, or diminish in any way the authority of the Medical Superintendent.

We are aware that the same rule as the one to which we are objecting exists in most County Asylums in England, but in the best managed it is a "dead letter." It has, however, come within our own knowledge that in one County Asylum in which it is acted on most rigidly, some three or four attendants whom the Superintendent had suspended were within one year (1874) re-instated by the Committee of Visitors in their situations. One of these was actually a case of cruelty to a patient, of which there was abundant evidence at the time, but which from causes best understood by those acquainted with such painful episodes was not sufficiently clear when, six weeks after the occurrence, it was investigated by the Committee. The effect of this upon the discipline of the place is obvious; the very presence of the nurse in question is a discouragement to any patient to complain even if ill-used; there is a general feeling of discontent and uncomplaisableness throughout the entire institution, and the patients suffer accordingly. Such a result is only what might be expected. But we maintain that even if such a thing as the Committee re-instating a suspended servant were unknown, the whole arrangement is, on the very face of it, palpably wrong. It cannot tend to the advantage of any institution that a governing head should be placed in the humiliating position of having to appear before the Board or Committee of Visitors as the accuser of his attendants, the Board having the right to act as they choose. In Ireland the matter is made even worse; for the Superintendent of an Irish district Asylum can now suspend for only three offences, viz, drunkenness, insubordination, and cruelty. To us in England it seems strange that the Inspectors should require a report (within three days of the suspension) of "the name of the party and the cause of suspension." We cannot see any object whatever to be gained by such a report. Do the Inspectors act as arbitrators at times between the Superintendents and suspended servants? Surely they have enough to do without going into matters so much out of their province, and the final decision of which must rest with the Board of Governors.

Rule 36 prescribes nine different books for which the Superintendent is responsible, and which he must see "kept with regularity." One of these is thus described:—"7. The Letter or Correspondence Book, in which shall be entered the dates of all letters received, and copies of all letters written on business of the institution." It may be said

that the clerk would see to such a book as this, but why should the Superintendent be burdened with the *responsibility* of it or any of the following being kept "at all times ready for inspection :"—(1) The General Register; (2) The Register of Discharges and Deaths; (3) The Morning Statement Book which shall contain a division of the patients according to *their chargeability*, the names of those under restraint or in seclusion, and the causes thereof—this in addition to a similar entry in "The Medical Journal!"—the hour and duration of visits of the respective officers—all to be countersigned *daily* by the Superintendent. (4) The Want Book specifying how many shoe-laces, kettles, quilts, &c., are required for the use of the asylum; (5) The Minute Book containing a full and faithful record of the proceedings of the Board; (6) The Application Book, in which shall be entered the particulars of the several applications for admission? Why, we repeat should the Superintendent be burdened with the responsibility of any of these seven books? Our readers will probably infer that the remaining two of the nine are those which, besides the "Medical Journal," are the only books an English Superintendent is held responsible for, namely, the Case Book and the Superintendent's Journal. If so they are in error.

The first part of Rule 35 might surely have been omitted. The idea of imposing such a restriction on a high-minded and intelligent officer (and we must suppose none else would be placed in a position of such trust) is somewhat humiliating. We are not aware that any such gratuitously vexatious personal restriction is in existence in similar institutions elsewhere. The Rule runs as follows :—

He shall never be absent from the Asylum at the same time with the matron, nor even for the night without special leave from a Board of Governors, or the Inspector, and upon every such absence he shall enter in the book the date and period.

The 89th Rule is only a suggestion, as it <sup>were</sup>, in its second paragraph. It runs thus :—

Attendants or servants are on no account to receive any perquisites, either in money or value, from patients or from the friends of patients; any infraction of this rule *should be* punished by immediate dismissal.

But who is to dismiss immediately? This difficulty seems to have been in the mind of the framer of the rule, for he doubtless recollected that by the humiliating 32nd Rule such an offence could not even be visited by suspension, much less dismissal.

On the whole we cannot speak very highly of the tact or wisdom shown by the Lord Lieutenant and Privy Council in the framing of the new Code of Regulations. We have gone to some trouble to point out clearly those which seem to require revision. An opportunity for the discussion of them by the Association at large will present itself at the coming meeting in Dublin, and we doubt not that our Irish brethren will then express their views forcibly and eloquently.

We have left ourselves little space to notice many features of interest in the blue-book before us, and must content ourselves for the present with merely drawing attention to a valuable table which appears among the details supplied regarding classification in each of the twenty-two district asylums, with the exception of Armagh and Carlow. By comparing these tables we find that on an average there is only provision for one-fourth of the patients to sleep in single rooms. On this point we would quote, as coinciding most decidedly with our own, the opinion of Commissioner Wilkins, who says :—

We are satisfied that the number of single rooms for *one-third* of the patients is too small to insure the best results. We are fully aware of the advantages to be derived from the association of patients, but think this can be done to best advantage *during the day* in large and pleasant airing-courts, sitting-rooms, and pleasure grounds.

We were surprised to find that in no less than four public asylums two-bedded dormitories are still in use. We had thought that long ere this the great risks of such rooms had caused them to be given up in all asylums, and the last one we expected to find them existing in was the one for the Richmond District at Dublin. Knowing the views of Dr. Lalor (as so plainly stated in his Presidential Address to the Association some twelve or thirteen years ago) we were not surprised to find by the tables under review that in the same asylum—the Richmond (for the “effective classification” in which the Inspectors, having it under their “close and constant supervision,” take some credit—v. p. 91)—no less than sixty-two men sleep in one dormitory. None of the other Irish districts has anything at all approaching to this; the next largest in any of them being for only thirty-two, while in fourteen out of the twenty giving information on this point there is no dormitory with more than nineteen beds.

Many of the members of our association will doubtless be visiting Dublin this year. It may not, therefore, be out of place—especially on account of the decided views held by Dr. Lalor on the subject of the treatment of the insane *collectively*, rather than individually—if we give here an epitome of the figures supplied at pp. 89 and 90 of the Report before us. There are nine wards for males and nine for females in the Richmond district, accommodating respectively 475 and 565 patients between them. Thus 1,040 patients are warded in 18 divisions. The largest of these is for 140 patients, the smallest for 17. The five largest wards (or “divisions”) have an average of 114 patients in each. As these are doubtless the wards which are most in accordance with Dr. Lalor’s ideas, we present our readers with a reference table regarding them :—

No. xix.	Ward,	Female side,	accommodates	140 patients.
„ ix.	„	Male	„	132
„ xiv.	„	Female	„	130
„ viii.	„	Male	„	92
„ xi.	„	Female	„	79

Of the remaining thirteen wards, seven accommodate 40 patients or more, and the others are for 37, 30, 28, 26 (two), and 17 respectively. If the nurse in charge of one of these large wards is able to give a good account of each of her patients, she must certainly be a person of no ordinary ability and conscientiousness.

*Schools for the Insane.*—We do not find in the report before us any expression of opinion on the part of the Inspectors as to the success of this experiment. It has been tried during the last 20 years at the Richmond District Establishment, but the only allusion to the schools there is contained in the brief statement at p. 90, that they were attended by 117 males out of a daily average of 456. No mention is made of the attendance at the female schools. We find, however, the following notice of the school at the Sligo District Asylum (v. p. 96):—

The school continues a source of agreeable *pastime* as stated by the Resident Medical Superintendent, who has no doubt as to its remedial efficacy, and also as to its moderate utility in an educational point of view.

*The Criminal Insane and Insane Criminals.*—The Inspectors add their testimony to the universal protest now being made against these two very different classes being treated alike. Ireland led the van in the movement for the dissociation from the ordinary insane of all those in any way mixed up with crime; but we fear from the remarks of the Inspectors, in more than one place in the report before us, that the tendency is now in a retrograde direction. We highly approve, however, of their idea of having attached to each convict establishment a sort of *probationary ward*, in which those prisoners exhibiting signs of insanity might be kept under observation for a short period before being sent to Dundrum near Dublin, where the “Criminal Asylum”—the first of the kind in the three kingdoms, and one reflecting great credit on the management—has been in operation since 1850. With regard to such persons, the Inspectors make the following excellent remarks:—

It is a remarkable fact that persons of this class not unfrequently bring with them to the Asylum the same obstinacy, impatience of restraint, and perversity of feeling which had rendered them unmanageable under prison discipline. Sometimes the existence of the alleged insanity in these individuals is really *doubtful*, their persistent disregard of discipline, their unwillingness to profit by the lessons of experience, and their mischievous disposition having led to the conclusion that their conduct must be attributable to mental or moral obliquity, although they betray no delusions. Indeed we can hardly be surprised if, under these circumstances, an opinion should be elsewhere entertained that such impracticables are not fit subjects for asylum treatment.

But with regard to the above classes of insane patients, we feel bound to protest against any such being sent to the District Hospitals for the Insane, which should be exclusively appropriated for the care and treatment of the ordinary insane who have not been the subjects of any criminal taint or charge, direct or indirect. The law is, to our mind, very plain on this important point of detail, as the following

extract from the Act, viz., 8 & 9 Vict., c. 107, s. 8.,—an Act intituled one “for the establishment of a Central Asylum for Insane persons charged with offences in *Ireland*,” shews:—

Be it enacted That whenever and as soon as the Central Asylum shall be erected, and fit for the reception of criminal lunatics, it shall be lawful for the Lord Lieutenant or other chief governor or governors of Ireland to order and direct that all criminal lunatics then in custody in any Lunatic Asylum or Gaol, or who shall thereafter be in custody, shall be removed without delay to such central asylum, and shall be kept therein so long as such criminal lunatics respectively shall be detained in custody.

Nothing can be plainer than the above in regard to the “custody” of “Criminal Lunatics,” and this retrograde movement of placing such characters within the walls of the ordinary establishments, is nothing short of a direct breach of the law as it stands.

We are further convinced of the great injustice and impropriety of so doing by the proceedings at a recent meeting of the Berlin Medico-Psychological Society, of which the following is an extract, so very pertinent to the subject under consideration, as transcribed into the *Medical Times and Gazette* of the 6th February:—

*Disposal of Insane Prisoners.*

As already observed, the mode of managing insane prisoners has hitherto been very objectionable, and it may be asked whether it would not be the better plan to send them to lunatic asylums.

This, at first sight, would seem to be the natural solution of the question.

It is, however, not a practical solution, for the transference of such prisoners to asylums is the law at the present time, after due care has been taken to acquire assurance that the patient is not simulating.

Dismissal from the prison on prophylactic grounds, however, never takes place, and only chronic and incurable cases are really brought to the asylums. These lunatic asylums hardly suffice for the wants of the free population, and are not suited to insane criminals, who, when assembled together, conspire, and require careful watching. In consequence, and in spite of their insanity, they are persons possessed of criminal intentions and immoral habits, rendering them unfit for the society of other lunatics.

Many lunatic asylums have protested against the reception of such patients, and more still will do so if all categories of prisoners of unsound mind are sent to them.

Most of the mentally diseased prisoners are not diseased in the sense of rendering them suitable inmates for ordinary lunatic asylums.

The best solution of the question would be the establishment of a department of the prison for lunatics, which, as far as the treatment of the diseases of its inmates is concerned, should be under the management of a regular psychological physician. This should be divided into two sections, one of which, destined for the actually insane, should be furnished with every appliance for their treatment.

The other section should admit the temporarily insane, the weak-minded, and all those whose cases require watching, as well as those who, in consequence of their physical condition, require a milder treatment than could be applied to them in the prison itself. Herr Ideler observed that his daily experience convinced him of the impropriety of introducing these insane prisoners into asylums, where they prove constant sources of disturbance. Lunatic asylums should have nothing to do with them, and no harm can result from their being treated in the prisons.

We have not left ourselves space to refer to many other interesting matters in the Report of the Inspectors, nor to take notice of the Private Establishments for the Insane in Ireland, further than to quote the statement made in regard to them—viz., “We are gratified at being enabled to report that, looking to the general working of private licensed houses during the past year, not a single cause of complaint sufficient to need an official inquiry was preferred to the Executive or to the Inspector; neither was there an instance of improper detention.” (p. 110.)

We have only, in conclusion, to say that the statistics are, taken as a whole, remarkably complete; their preparation must have been a most laborious task to both Inspectors and Medical Superintendents respectively; and further, that the entire contents of this blue-book for 1873 evince great care and labour in compilation, and reflect no small credit upon the department from which it has emanated.

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## 2. *French Retrospect.*

By T. W. McDOWALL, M.D., Edin., and J. G. McDOWALL, M.B., Edin.

(“*Annales Médico-Psychologiques*” for 1874.)

*On the Influence of Moral Causes upon the Body and specially upon the Nervous System.*

This great subject is treated by Dr. Védie by giving very shortly:—

1.—A *resumé* of those psychological facts which bear most upon the subject.

2.—An examination of physiological phenomena connected with the former. Then shall become evident the laws which govern all psychological and physiological phenomena.

3.—The application of these laws to pathology and therapeutics; or, what is equivalent, an examination of the pathological and therapeutical phenomena produced by mental causes. The question of miracles naturally falls to be discussed in connection with this part of the subject.

4.—The reasons why some educated people and even physicians err in their views concerning miracles, and misunderstand the natural laws which regulate these phenomena.

It is unnecessary to reproduce any of the author's remarks on the analysis and synthesis of the phenomena of consciousness, but we may indicate his method of treating of the action of the emotions on the organism. He divides the subject as follows:—

I.—Effects of moral causes upon the cerebro-spinal system and upon the great sympathetic.

A.—Effects upon the cerebro-spinal system. They are of two kinds; those discovered by observation, and those discovered by experiment.

*Facts derived from Observation.*—Everyone can prove for himself that the act of reflection, of combining ideas, of experiencing emotions, &c., produces a kind of indefinable fatigue, malaise, even pain, which is chiefly located in the brain.

It has been noticed also that intellectual work is always accompanied, after a certain time, by a distinct sensation of hunger or of the necessity for stimulants. This clearly indicates a loss of nervous force. But if the mental exertion has been too severe, the individual may experience an aversion to food, which shows at least a functional derangement of the stomach.

*Facts derived from Physiological Experiment.*—When psychological phenomena are in process of manifestation, there is a very considerable afflux of blood in the cerebral arteries. This may be expected to result in a rise of temperature, and increased interchange of material in the nervous tissue. It has been established by Legallois and others that arterial blood is essential to the nervous system, and that its absence involves the abolition of the cerebro-spinal functions. The exhalation of carbonic acid and the temperature of the body are appreciably raised during mental activity. According to Burdach, the heat of the body is increased by hope, joy, anger, and all exciting passions. Martin saw it rise from  $35.5^{\circ}$  to  $37.5^{\circ}$  (cent.) in a violent fit of anger. Schiff has shown that that of the nerves also is increased during functional activity. Lastly, Byasson has demonstrated that cerebral as well as muscular work is accompanied by an increased production of urea, which proves a production of heat greater than in the normal state. All these facts indicate that the manifestation of mind is accompanied by an exercise of the nervous system, and, indeed, that this work may be measured by the production of combustions which occur in the cerebro-spinal centres.

B.—Physiological effects produced by moral causes acting upon the great sympathetic. Changes in the colour of the face, and the various disorders produced in all the organs by the influence of violent moral causes, evidence the action of psychological phenomena upon the vaso-motor nerves, and prove that the shock to the cerebro-spinal system is communicated to the sympathetic. As examples, it is necessary only to refer to the well-known action of the emotions upon the heart and circulation. The stomach, however ridiculed by philosophers and moralists, is not insensible to the action of an agreeable emotion; and it is a matter of common observation that a person in whom this organ is sluggish or refractory, feels his appetite return if his dinner is enlivened by the presence of a friend. The removal of an anxiety often produces a greater effect than a glass of spirits or a cup of tea.

II.—Pathological and therapeutic effects of moral causes. This influence of moral causes upon the vaso-motor nerves easily explains to us all those cases of spontaneous recovery and also of sudden illness which so frequently astonish the vulgar and even physicians.

1st. Pathological effects of moral causes upon the nervous system. It is impossible to classify in a methodical manner the pathological nervous symptoms produced by the action of moral causes. For, according to individual predisposition, one will suffer from headache, another from insomnia, a third from some other nervous disorder. It would be necessary to notice the immense class of the neuroses, to convey an idea of the large number of nervous diseases whose development may be caused or favoured by moral causes. On this subject all writers on pathology are unanimous.

2nd. Pathological influence of moral causes upon the bodily functions. Medical literature is very rich in facts which prove that moral causes have an influence, not only upon the nervous system, but upon all the functions of the economy. They rarely affect a single organ, but generally several at once. In the production of disease they act as in the physiological state, by disturbing the innervation of the vaso-motors, but to a very much greater degree. We can in this manner explain the influence of the emotions, and of the super-excited imagination in resolving or aggravating inflammation, and in favouring or disturbing the process of nutrition. But as certain moral causes have an evil influence, so others have a beneficial action upon the organism. Imagination and powerful emotion have produced remarkable therapeutic results. All cases of paralysis cured by such means belong to the class described as nervous or hysterical. In connection with recoveries regarded as miraculous, it may be remarked that they have occurred in countries in which entirely different religions prevail.

It is unnecessary to follow the author further in his arguments to prove that all so-called miracles have nothing of the supernatural about them. Really, at this time of day, it is difficult to believe that people do live having faith in manifestations of the miraculous. They might succeed in converting unbelievers could they exhibit cases of general paralysis cured by visiting a shrine.

### *Hypertrophy of the Brain.*

In connection with his paper Dr. Brunet gives a large number of references to French papers relating to this subject. He defines hypertrophy of the brain as an increase in the weight of that organ due to a disorder of nutrition leading to an alteration in the nervous substance. Hypertrophy, as well as arrest of development, is much rarer in women than in men, so that the extreme variations in brain weight are met chiefly among the latter.

Cerebral hypertrophy occurs under two forms, according as it is or

is not accompanied by induration of the nervous substance. In both these forms the cerebellum generally remains normal or almost so.

*Cerebral Hypertrophy with Induration.*—This disease, in spite of several works devoted to its consideration, is but imperfectly known. It is due to the increase of the connective tissue which leads to atrophy of the nerve cells and fibres, as well as of the capillaries. It occurs indifferently during childhood, adolescence, adult and mature age, but not beyond 50. Saturnine intoxication is the only cause whose power is incontestable.

Its anatomical characters render it easy of recognition. The sinking and flattening of the convolutions, the diminution of the capacity of the ventricles, the induration and discoloration of the grey but specially of the white matter, constitute a set of anatomico-pathological signs which belong to it alone. According to Brunet the brain may increase to nearly double its normal weight; it may have the consistence of dried marsh-mallow paste; its cut surface is clean, pale, polished, glistening, and some empty vessels may be observed which by the appearance of their walls resemble the holes seen in Gruyère.

The principal symptoms of the disease are severe headache, periodically intensified; excitement, alternating with coma; blunting, enfeeblement, or arrest of development of the intelligence; difficulty in walking and moving the joints; epileptiform convulsions. In children these symptoms are less marked than in adults, because the brain is less compressed, the cranial cavity increasing in capacity as the organ enlarges.

Induration of the brain may be met, not only with hypertrophy of that organ, but also with it of normal volume, or atrophied. In paralytic dementia of long duration the white substance is hardened and atrophied, whilst the cortical layer is softened.

*Cerebral Hypertrophy without Induration.*—Dr. Brunet does not think that this form of hypertrophy has hitherto been described. He has observed two cases of it in idiots. It was complicated by periencephalitis, probably occurring during the last months of life. At the post-mortem examination of one of these cases, an epileptic mute, the following observations were made:—The arachnoid and pia mater are much injected, and present several sanguineous extravasations in their substance. They are not adherent to the cortical substance, except to a slight degree at a few places, as is found in the first stage of chronic periencephalitis. The brain is very voluminous, and forms two well-marked projections posteriorly. The convolutions are compressed, flattened, and the sulci are shallow. They are probably flattened by the pressure of the brain against the bones of the skull; this flattening is specially marked in the anterior third of the external surfaces. The cortical substance is more coloured than normally; the white substance congested. Microscopic examination demonstrated hypertrophy of the connective tissue, and the capillaries numerous and much injected.

*Upon the Progress of General Paralysis.*

Dr. Fabre's object in writing this paper is to describe a form of paralytic insanity characterised by alternate excitement and depression. Having given a number of illustrative cases, he concludes as follows :—

“ It appears to me useless to discuss the cases I have produced, and to insist at too great length upon the conclusions to be drawn from the examination of these observations, which appear to me sufficient to establish the existence of a variety of general paralysis which may be called *folie paralytique circulaire*.

“ This variety is again sub-divided into two varieties, according as the attacks of excitement and depression are or are not separated by a period of remission or intermission. When general paralysis (*circulaire*) consists of but two phases, one of excitement, the other of depression, it may be called *folie paralytique à double phase*. Each of these periods is characterised by special symptoms. During the stage of excitement, in addition to the maniacal symptoms, there are observed ideas of contentment, satisfaction, and exaltation, combined, sometimes, with those of persecution. In the stage of depression the symptoms of melancholia may be so far advanced as to appear as profound stupor. There may be also a tendency to suicide; but it is particularly important to observe the predominance of melancholic delusions, and specially, hypochondriasis. Excitement and depression in this sub-variety succeed each other suddenly, and without transition. A patient who is violently excited one day may be depressed the next. The delirium changes in the same manner. Ideas of grandeur and riches are suddenly replaced by melancholic and hypochondriacal delusions.

“ When paralytic insanity (*circulaire*) consists of three periods—excitement, quiet, and depression—it may then be called *folie paralytique circulaire à triple phase*. In non-paralytic *folie circulaire*, when the three conditions of excitement, depression, and lucid interval exist, they generally succeed themselves in the order given. This does not hold good in paralytic insanity *à triple phase*. The periods of excitement and depression in this sub-variety present no character which distinguishes them from those observed in the first; all the difference between the two consists in the existence or non-existence of a remission or lucid interval.”

*Influence of the Events of 1870-71 upon the Development of Mental Disease in France.*

During the last two years Dr. Lunier has continued his paper on this subject. It is now finished, and the following are his conclusions :—

1.—The events of 1870-71 caused more or less directly, from 1st

July, 1870, to 31st December, 1871, the occurrence of 1,700 to 1,800 cases of insanity.

2.—During the same time French Asylums received 1,300 patients fewer than in the corresponding period of 1869-70.

3.—The immediate results of the events of 1870-71 have thus been to diminish considerably the number of admissions into asylums, and, consequently, the total remaining at the end of the year.

4.—The number of lunatics which should have been, in ordinary circumstances, 40,056 on the 1st January, 1872, was only 37,451—a difference of 2,605.

5.—The diminution in the number of admissions from 1st July, 1870, to 31st December, 1871, must be attributed to various direct and indirect causes, among which may be mentioned :

a.—The irregularity in the working of the lunacy department due to the unusual circumstances.

b.—The parsimony of some departmental administrations.

c.—The suspension of certain etiological influences which, during peace and prosperity, frequently produce mental derangement.

6.—The acute character of mental diseases observed in 1870-71, and, consequently, their rapid termination by death, but much more frequently in recovery, also contributed, in a certain measure, to diminish the total numbers remaining at the end of 1870 and 1871.

7.—But from the end of 1871 the total number of admissions tended to resume its gradual increase, and in 1872 it presented quite an exceptional one (2,785) ; in 1873 it was only 872, which is nearly an average.

8.—This increase in the total admissions, which must, moreover, be attributed to very various causes, and the chronicity and consequent incurability which the disease presented in a very large proportion of the new admissions, had the effect of increasing, to a great extent, from 1872, the number remaining at the end of the year, which was 40,236 at the end of 1872, and 41,108 at the end of 1873. In all probability this last number differs very little from what it would have been had these calamitous years not come upon us.

9.—The events of 1870-71 moderated for the time, but have not arrested, the progressive increase of the relative number of lunatics placed in asylums. In 1869 the proportion was 1 in 989 of the population, and on 1st January, 1874, 964.

10.—The increase in the number of lunatics since the beginning of 1872 has almost equally affected the whole of France.

11.—Mental diseases caused by the events of 1870-71 were more frequent in men than women. The increase in admissions since the beginning of 1872 appears, on the contrary, to have occurred chiefly among women ; but in both cases the difference is small.

12.—Hereditary predisposition plays a comparatively unimportant part in the development of mental diseases determined by the events of 1870-71. It was observed in only 24 per cent., whilst under

ordinary circumstances its influences, to a greater or less extent, is observed in 63 per cent. of cases.

13.—Among the determining causes of mental diseases attributed to the occurrences of 1870-71, some acted only indirectly by exciting emotions, which are often, in ordinary times, causes of insanity, but which were more numerous and more distinctly marked; others acted directly upon the individual. These last were only observed in the departments occupied or immediately threatened by the enemy; the former, on the contrary, occurred in all parts of France.

14.—The exciting causes most frequently observed were: anxiety at the approach of the enemy; the fear of, or vexation at, being pressed into active service; the departure of a dear relation to join the army; the physical and mental fatigues of the war, and specially of the siege of Paris; emotions experienced during a battle or a bombardment; changes in position or fortune; grief caused by intelligence of our misfortunes; politico-social excitement; occupation of the country by the enemy.

15.—Although the causes which determined insanity in our patients were chiefly of a depressing and debilitating nature, there were observed almost all the forms and varieties of mental derangement ordinarily met with in asylums. The expansive forms were observed even more frequently than the depressed.

16.—If, then, the disorders which physical causes determine in the functions of the brain present almost constantly the same characters, those produced by moral causes have generally no relation, or only a casual one, to the causes which have produced them.

17.—Attentive study of cases of relapse shows that in the same individual:—

*a.*—The same moral cause may lead to absolutely different forms of delirium.

*b.*—Entirely dissimilar causes produce sometimes the same, at other times different, forms of insanity.

18.—In many of our patients, nevertheless, particularly those who had been guilty of drinking to excess, and who were exceedingly anæmic, certain symptoms of the disease recalled, up to a certain point the causes which had led to it. Amongst the morbid phenomena most frequently observed it is necessary to mention stupor, pantophobia, abstinence from food, suicidal impulses, megalomania, hallucinations of hearing, and delusions of persecution.

#### *On Pachymeningitis among the Insane.*

In 1864 Dr. Christian wrote a thesis on this subject. Further observation tends to confirm his previous conclusions. In this paper he gives the details of nine cases, but it is only necessary to note his deductions from these clinical and pathological notes.

Pachymeningitis is inflammation of the dura mater. It is characterised anatomically by the production of cellular neomembranes,

generally vascular, on the internal surface of the dura mater. Investigations, followed in France and Germany, have showed the important part which this inflammation plays in the production of intra-arachnoidean meningeal hæmorrhages, a part so important and constant that it is impossible to separate the history of these two diseases; and it is now generally admitted that they are connected with one and the same affection, of which the neomembranes and the hæmorrhages are equally the result. This was Dr. Christian's former opinion, and he is confirmed in it by his new observations. But, even as the neomembrane may exist and develop without hæmorrhage, so may the blood escape into the cavity of the arachnoid without the presence of the neomembrane. A vessel of the dura mater, a sinus may rupture, and hæmorrhage result, quite independently of all previous inflammation. These hæmorrhages, without neomembranes, are not extremely rare in lunatics. Calmeil has recorded several, but Dr. Christian has met with but one case. Without mental derangement, intra-arachnoidean meningeal hæmorrhage has been met with in cases of alcoholism, although in these inflammation of the dura mater is far from rare. The fatty degeneration of the vessels, the consequence of chronic alcoholism, explains the facility of their rupture.

Dr. Christian has published a case of extrameningeal hæmorrhage which followed indigestion in a maniacal imbecile. Cerebral congestion, due to repeated efforts at vomiting, caused the rupture of a vessel on the external surface of the dura mater. The blood escaped between that membrane and the cranium.

It is evident that pachymeningitis is not the only necessary cause of intra-arachnoidean meningeal hæmorrhage; and without speaking of the results of direct examination, which is not always very easy, it is by the progress, symptoms, and antecedents of the patient that we are enabled pretty accurately to establish the difference.

The hæmorrhage is a symptom; the pachymeningitis is a disease. Thus, in simple hæmorrhage, we see the signs of intense cerebral congestion, followed suddenly by those of cerebral compression. There is nothing like that in pachymeningitis. The cerebral disorders are of long standing; generally they pursue a chronic, insidious course. The patient experiences anomalous congestive symptoms; attacks of partial hemiplegia which disappear, then return; he falls into a state of marasmus, and when he dies there are found neomembranes more or less developed, and overspread by hæmorrhagic layers of different ages.

Pachymeningitis is not very rare among lunatics; it is principally met with in general paralysis, in which Baillarger observed it in one in eight, Brunet in one in five, Christian in one in three cases. But it is observed in other forms of mental derangement, as mania, dementia, &c. On every occasion in which Dr. Christian met with it, there existed other alterations, either of the brain, or of the membranes, but chiefly vascular lesions, so that he is inclined to believe that

pachymeningitis may occur as a complication in all forms of insanity accompanied by a chronic lesion of the nervous centres.

Among lunatics it occurs either as a last symptom, when we find only rudimentary neomembranes, accompanied by extravasations of recent blood, or, on the other hand, it pursues a chronic course, and acquires a considerable development, as is shown by the advanced structure of the neomembranes. It then shows itself by symptoms which are peculiar to it, and appears to exercise a considerable influence even upon the progress of the delirium, at least in certain cases.

Endless discussion has arisen on the question whether the hæmorrhage has preceded the neomembrane, or whether the latter has been the primary lesion and the cause of the effusion of blood. The opinion that the membrane is formed from the clot is not now common, for neither the fibrine nor the other constituents of the blood are capable of organisation. Then how does it happen that a thin membrane, scarcely organised, is able to throw out a considerable quantity of blood?

The neomembrane is formed on the internal surface of the dura mater; the vessels which are therein developed anastomose with those of the dura mater; but all these vessels of recent formation have, as a rule, but an incomplete rudimentary structure; their walls easily undergo fatty degeneration.

If, then, by any cause, the dura mater becomes congested, there is every probability of a rupture occurring at the point of least resistance, that is to say, in the course of the new vessels, or rather at the point where these vessels inosculate with those of the dura mater. There can then happen but one of two things—either the blood escapes in small quantity, and the thin neomembrane, not being ruptured, confines the clot; or, on the other hand, the hæmorrhage being abundant, ruptures the cellular structure, and escapes into the cavity of the arachnoid.

Dr. Christian is of opinion that the delirium of pachymeningitis is peculiar. There is a kind of *égarement* quite characteristic, which contrasts so distinctly with the more or less co-ordinated delirium of insanity, that every time he saw it appear in a lunatic he considered it an almost certain indication of pachymeningitis. At the same time that this *égarement* appears, marasmus proceeds more rapidly. Lastly, there occur symptoms of incomplete hemiplegia; comatose attacks disappearing in a few days, which are due to successive hæmorrhages. These symptoms remove all doubt. But none of these phenomena are pathognomonic. Their pathological significance is due to their combination, mode of appearance, and more or less rapid succession.

(To be continued.)

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*Bulletin de la Société de Médecine Mentale de Belgique.* Nos. 1-4, 1873.

This is a new journal, and owes its existence to the formation of a new society. How these sprang into being is detailed at considerable length in the first number, and the following scraps of information are

given in order that it may be seen how our Belgian confrères intend to forward objects in which we have a mutual interest.

*Formation of the Société de Médecine Mentale de Belgique.*

As the result of an appeal by Dr. Bulckens to Belgian psychologists, there assembled at Ghent, on the 27th June, 1869, seven gentlemen. At this meeting a sketch of the constitution of a society, to be called the Société Phreniatrique, was prepared. At a second meeting in September it was agreed that the aims of the society should be:—1. The improvement of the condition of the insane in Belgium. 2. The perfecting of asylums and the various modes of treatment. It is proposed to effect these objects by examination of the laws relating to lunatics; by acquiring and disseminating facts calculated to advance mental pathology; and by watching over the professional interests of medical men specially engaged in the study of mental disease.

At a meeting in October, after long discussion as to what particular work the Society should first direct its attention, it was resolved that the members should be invited by circular to bring under the notice of the Bureau any defects in their own establishments or in the general administration, along with the measures by which they hoped to see these corrected. From these reports the more interesting and important were to be selected as material for discussion at the next meeting. M. Jaque called attention to the medical certificates, which he regarded as generally brief and incomplete, and suggested that a model should be prepared. He thought that all facts concerning patients should be communicated directly to the physician of the asylum,—and further that the lack of workshops and the insufficient wages of attendants were to be regretted.

M. Van Holsbeck called attention to the heating and ventilation of asylums, and to the dress and diet of patients, all of which he looked upon as defective. He thought that asylum physicians, to insure their authority, should be appointed by government. He objected to patients in an asylum being visited by other medical men without the previous sanction of the Medical Superintendent. The admission of patients should be simplified; special asylums for epileptics should be erected; and chairs of psychology should be founded in the Universities.

Dr. Semal approved that asylum physicians should be appointed by government, with salaries corresponding to the number of their patients. In cases where the physician is also director, he should receive further remuneration from the proprietor. Dr. Semal urged that every asylum physician should be present at the meetings of the local committees of inspection.

Dr. Lentz suggested for consideration the means to be adopted for the improvement of wards occupied by dirty cases.

From among these various subjects two were chosen—1. The posi-

tion of the physician in Belgian Asylums, what it is, and what it ought to be. 2. Dr. Lentz's proposition.

It was, however, found that the first of these subjects was too extensive, and the discussion was therefore limited to the methods of nomination and remuneration of asylum physicians, and the formation of the local committees of inspection, with special reference to the advisability of the presence of the medical officers at the meetings.

Concerning the improvement of wards for dirty cases Dr. Lentz thought that Belgium had fallen behind. His experience had taught him that while a well regulated diet would do much, careful attendants were indispensable. M. Bulckens wished to form at Gheel a special department for such patients, and thought that the family system of treatment was one of the most advantageous. Dr. Semal pointed out the importance of a sufficient staff of attendants. Though the law insisted on one for every ten patients, it was evaded by including servants other than pure attendants.

*On the Management of the Insane in Belgium.*

A report on this subject was drawn up by a committee and submitted to the Society. In comparing the French and Belgian laws relating to insanity, it is pointed out that while the former, by insisting on each department providing asylum accommodation for its insane, with officers appointed by government, insure the curative treatment of these patients; the latter, overlooking this principle, merely tend to prevent former abuses, without being provocative of improvement.

At present (1870) government is unable to compel parishes to provide accommodation for their insane, who are thus free to roam about until some act renders them amenable to criminal law. Should any parish propose to build an asylum, government, by enforcing the exactions of the law of 1850, makes such an undertaking so costly that the intention is at once abandoned. Further, government has as yet confined itself to aiding in the erection of large asylums, systematically abolishing small communal refuges. In the opinion of the Committee these ought to be preserved for the accommodation of idiots and demented, whilst large asylums should be built for dangerous and curable cases by the communes. The defective state of the present law is further shown by the large number of chronic lunatics who fill existing asylums, the patients having been neglected until treatment has become useless. To remove these defects the government should restore to the central power the duty of erecting and regulating asylums, and assist in defraying the expense. The Committee considers that chairs of psychological medicine, with courses of practical instruction, are urgently required.

The physician should exercise control over both medical and administrative departments, and reside in the asylum. The attendants should be appointed by him. Care should be taken to exclude individuals bound by the laws of religious societies. The cost of mainten-

ance should be defrayed by means of taxation. Asylums should not be private enterprises. At present the administrative committees of asylums arrange with certain religious bodies who supply food and all necessaries at a remuneration varying from 70 to 90 centimes per day, per head.

Dr. Semal proposed the formation of a commission, drawn from the legal and medical professions, to which superintendents should send notice of the admission of patients. These commissioners would visit and inspect all asylums at undetermined times. Several matters connected with the admission of patients require attention.

Dr. Bulckens thought the erection of public asylums throughout the country too sweeping a measure to be practicable, and proposed the building of one model asylum, the arrangements and rate of maintenance of which would provide a standard up to which the law should compel proprietors to raise their own institutions. He did not approve of separate asylums for incurable or epileptic cases.

The Society ultimately agreed that medical superintendents of private asylums should be proposed by the proprietors, approved by the local authorities, and appointed by government.

M. Van den Abeele said that it appeared to him that the report of reasons for the projected new law did not exhibit one of the most essential sides of the question. He pointed out that since the public had become assured of the well-being of patients committed to asylums, idiots, imbeciles and other incurables were sent in such numbers that the asylums would very soon be filled by them, a condition unfavourable for the treatment of acute cases. He held that ordinary hospitals for incurables should be imitated in asylum practice, and advocated the establishment of farms where the usual stringency of confinement might be much relaxed.

M. Oudart objected to separate asylums, but would add to those already existing a special section for these cases.

M. Semal objected to the proposed separation. He believed that by locating a patient among a large number of incurables, his last hope of recovery was lost, and related an illustrative case. He thought further that the additions proposed by M. Van den Abeele would soon become larger and more important financially than the asylum proper; and that, freed from the exactions of the law, they would become the centres of great abuses. After directing attention to various other difficulties in the proposal, he went on to say that he did not consider it requisite that all classes of curable cases should be separated from the incurable. Patients were generally classed in one of four divisions—the excited, the dirty, the semi-excited, and the quiet. He thought it would not be injurious to a case of acute mania to be associated with incurables, but he would separate the semi-excited and the quiet, believing that it was better for minds naturally feeble, or enfeebled by previous disease, to be brought in contact with the eccentricities of acute maniacs than with the

quietude of incurables. Of these incurables, cases of sensory illusions, resulting in conversations with invisible beings, should be carefully separated from the semi-excited. He proposed the following arrangement, as a classification founded on the chances of recovery, and not on the relative amount of excitement exhibited by the patients :—

1st.—A section for excited patients, to consist of curables, violent incurables, and epileptics.

2nd.—A section for dirty patients, quiet or the reverse.

3rd.—A section for semi-excited curables and incurables, from which epileptics and cases of hysteria would be removed to form the—

4th.—A section for convulsives.

5th.—A section for quiet incurables, which cases should be kept apart from convulsives.

To this last class he would allow greater freedom, and believed that for them the existence of a farm or workshops would be of advantage. He concluded by proposing as an improvement of M. Van den Abeele's suggestion, that the attention of government be called to the necessity of adding two new sections to asylums, one for convalescents, the other for convulsives; and also to the necessity for erecting an asylum for incurables, in which the rigours of confinement should be relaxed as far as possible.

A discussion ensued, exhibiting much diversity of opinion on the subject.

M. Van den Abeele then called attention to the insufficiency of the certificates of admission. He thought that by increasing the salaries of the poor law physicians they might be called upon to furnish these documents. M. Ingels was of opinion that if patients were refused admission unless the certificates were legally correct, no such reform would be requisite. M. Semal proposed that a model certificate and confidential bulletin be issued by government; that it be stamped, and printed with blank spaces for the required answers; that it be sent to each parish, and be obtainable gratis by the physicians. This was eventually adopted.

#### *Practical Suggestions as to Beds for Dirty Patients.*

M. Vermeulen recalled that in 1853 the Medico-Psychological Society devoted several meetings to the consideration of the treatment of these patients, and of the improvement of their wards. But while much had been done to diminish their number, there would always be a certain number of hopelessly dirty patients. Dagonet and Guislain had both recognised the difficulty of providing suitable beds for cases such as general paralytics, and the latter had recommended the use of bare straw.

After seeing this plan in force in various German asylums, M. Vermeulen disapproved of it.

In Belgium chaff or straw, and the husks of oats or rape-seed were

cheap, and were of some value after use as manure. In asylums situated in the country, and having patients working in the fields, the expense of such bedding was almost nothing. Where rape-seed is abundant, its chaff is to be preferred on account of its oily coat permitting the easy filtration of urine, &c.

He wished to describe a bed which had been in use for thirty years, and which was made up of three compartments, the middle one of which was changed daily. These compartments were filled with oat chaff, and rested on a thick straw mat. In this mat there was an aperture, into which was fitted a flattened funnel of zinc, the tube of which depended over a receptacle placed beneath the bed. This provision was made under the central cushion, and thus allowed the urine to drain away. This mattress at once prevented the irritation arising from contact of sores with the chaff, and obviated the objections of Guislain to the use of linen mattresses, the central cushion being readily removed and emptied. He considered that iron bedsteads were much to be preferred to wooden ones. To avoid the soiling of the floor by the removal of the receptacle by patients, M. Oudart and he have had constructed an iron bed, beneath which the receptacle slips on a groove, and is secured in position by means of a key.

The beds in use at Froidmont were manufactured by M. Garnier, of Ghent, who has further improved them by separating the middle cushion and the funnel by means of laths. This prevents the cushion from soaking in the urine.

In 1860 Théotime proposed to replace the funnel, &c., by a spring cushion resembling the seat of a comfortable arm-chair. The depression of this by the weight of the patient's pelvis leads to the urine collecting in it, and draining off by means of an oval aperture in the middle. From this aperture hangs a channel long enough to reach the receptacle beneath. This central cushion is covered with linen cloth coated with several layers of oil paint, to which is added some starch paste, to render the tissue more flexible, and prevent the paint falling off.

The feet and upper part of the body rest on two cushions of hair and wool, so that the mattress consists of three compartments. To prevent immediate contact with the paint, a cushion of hair is placed under the patient's hips. These beds have the following advantages:—a minimum cost; an efficient mode of draining off urine, &c.; and a great diminution in the trouble of changing the soiled beds.

#### *On the Employment of Means of Restraint, by Dr. LENTZ.*

He first enumerates the means of restraint, then indicates their use in the various cases which require them, and finally examines the advantages and disadvantages of each. He does not regard seclusion as coming within the list of the means of mechanical restraint.

He says—We will not speak further of the method of non-restraint, because we do not find its introduction desirable in our asylums.

And we are convinced that non-restraint, in so far as it employs manual strength as a sedative, has prolonged more excitement than it has calmed.

*Enumeration of the various means of restraint.*—1. Strait-jacket having either the sleeves free or secured. 2. The various forms of fetter : the belt with bracelets and tackle, generally known as the belt of Haslam ; simple gauntlets ; fetters for the feet, for the hands ; the collar of leather ; the sheet. Also linen bands attached to the bed and passed round the patient ; other beds with bracelets for the reception of the arms and legs. These means are often combined. 3. Restraint chair, resembling the chair of a dirty patient, but furnished with straps to secure his arms and legs.

*On the employment of restraint as regulated by the various cases.*—*Suicidal Patients.*—For these he advocates the formation of a special ward, with special supervision, and considers mechanical restraint cruel and inefficient, and tending to render supervision less careful. *Homicidal Patients.*—For such of these patients as have the mental power to plan the deeds which they intend to commit, he would propose the formation of a special section, with the requisite arrangements, in some one asylum for the country. Failing this, he advises the use of fetters to the feet, such as are used at Gheel. They consist of well-stuffed anklets, united by a steel chain long enough to allow of walking without much difficulty.

*Means of restraint during the night for chronic lunatics.*—He speaks here of chronic non-violent patients who leave their beds, and disarrange their own and their neighbours' bedding. He considers forced decubitus, especially in dirty cases among these patients, too severe a measure.

In such as confine themselves to walking about, he does not see much inconvenience in fastening a foot, provided always that such treatment does not occasion excitement. For others, single rooms are requisite. For very filthy patients, he leaves to be determined by discussion whether forced decubitus is advisable or not.

*Of means of restraint during the day.*—There are various classes of patients requiring temporary restraint during the day. Some epileptics, and cases of recurrent and intermittent mania, liable to sudden attacks of intense excitement, he would secure by fetters to the feet. These should allow of freedom to walk, while they rendered it easy to overpower a patient ; they should be constantly worn by such cases, unless there exist well-marked premonitory symptoms of the approaching excitement. Another class consists of patients, as general paralytics, &c., who occasionally require restraint for a time. Where the excitement is increased by the sight of surrounding objects, he advises seclusion.

In other cases, the intensity of the excitement will regulate the severity of the restraint to be enforced. Thus, it may be necessary simply to tie the hands behind the back, or to secure the hands and

feet. The strongest jackets and most complicated fetters sometimes prove insufficient; when constant seclusion, in which the patient becomes thoroughly emaciated, must be resorted to. Of all systems of treatment of such cases, that by forcible confinement to bed he considers the worst. For them he would like to see introduced single rooms, provided, and directly communicating, with a court or green.

The restraint chair he looks upon as of value in cases of excitement, where seclusion or forced decubitus would be injurious, as in certain attacks of short duration in cases of general paralysis.

Among patients requiring restraint are those who tear, bite, or masturbate. For tearers, the belt of Haslam, leather gloves, or the fastening of the hands behind may be employed. For patients who bite, and tear their clothes to pieces with their teeth, even if their arms and legs be secured, Guislain employed forced decubitus, the leather collar, or even a mask of iron-wire, or else placed them naked in an empty warm room.

For masturbators he recommends the use of a special chair during the day, and forced decubitus at night, only to be used, however, in cases of prolonged sexual excitement. He looks upon the strait jacket as a means of punishment not to be neglected.

*On the inconveniences of restraint.*—The strait jacket he considers the most defective of all the means enumerated, and liable by compressing the larynx to give rise to accidents. Again, patients undergoing restraint are liable to fall and injure themselves, and are unable to attend to the calls of nature, especially when wearing the strait jacket. Restraint often irritates patients, and increases excitement, giving rise to struggles with attendants. He sums up as follows:—

1.—The introduction of non-restraint is not desirable. All efforts should tend to reduce the amount of restraint as far as possible.

2.—During the day, seclusion should be reduced by restraint, except where it is used as a therapeutic agent.

3.—Restraint—except in rare cases—should be abolished from among suicidal cases.

4.—A special section should be formed for specially dangerous patients, who should constantly wear feet fetters, and when violent, the belt of Haslam.

5.—A chronic lunatic should not be secured in bed at night. A night-watch should be provided, as well as warm single rooms. If necessary, restraint may be used.

6.—Patients prone to sudden attacks should wear feet-fetters constantly.

7.—For excited patients, the best mode of diminishing the amount of restraint is to provide them with plenty of room. Single rooms with a court or green in connection should be erected for cases of prolonged intense excitement.

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*On Food in its Application to the Treatment of Mental Disease.* By  
JOSEPH DE SMETH.

As an introduction, the intimate relations of food, organ, and function are alluded to, and their importance insisted on as being of the first order.

The nervous centres, like other organs, take up aliment and throw off waste ; and the more they are exercised, the greater will be the supply of nutritive material required, and the greater the waste material excreted.

This has been demonstrated experimentally by Schiff, and Moleschott says "mental effort increases the excretion of urea, raises the temperature, and imposes the necessity of repair."

If such be necessary in the healthy brain, it is still more so in the morbidly active brain, above all when this morbid activity is due to a partial or general disturbance of nutrition.

On such data as the foregoing he has founded his researches on this subject.

Could the exact amount of waste in the healthy and diseased brain be estimated, and were the processes of nutrition of the nerve cells known, it might be possible to estimate with certainty the quality and quantity of food required to preserve the healthy and to restore the morbid brain. Thus, a certain element of the cells being wanting or in excess, a knowledge of this would allow of the direct increase or diminution of its supply, and the control of the physician over the disease would be greatly increased.

This exact information is wanting, and should it be obtained, it must be remembered that with few exceptions all nutritives are greatly altered before reaching the nerve cells ; and that derangement of the attractive and selective powers of these cells will prevent them from consuming their normal aliment.

Notwithstanding this there are certain data on which conclusions may be definitely founded. Thus, without doubt, deficient food results in impoverished blood, which again must fail adequately to supply the various systems of the body. Of these systems that which first and most evidently exhibits symptoms of impaired nutrition is the nervous. While the supply of food and the entire process of its assimilation are all-important, it is necessary to examine separately the various processes which accomplish this assimilation. Thus deficient blood supply may be dependent on disease of the digestive, respiratory, or circulatory systems respectively, one or more of which may thus be shown to be the primitive cause of the mental disturbance. It then becomes of importance to regulate the functions of these various systems, in order that the nutrition supplied may not fail to be utilized.

Further, that any organ may remain healthy, its cells must possess a certain selective power, which enables them to single out their appropriate food from the blood. We thus see that the histogenetic

processes of any given organ depend for their due performance, up to a certain point, on all preceding acts of digestion and assimilation, and then on the selective powers of its own cells. If these latter powers be in abeyance, the sufficient supply of healthy blood will fail to sustain the normal functions of the organ, and the mal-nutrition of the nervous centres may thus depend either on their own failure of assimilation, or on a failure of supply induced by disease of some other organ.

For example, by a sudden and powerful mental shock, sustained by the perceptive centres, an attack of melancholia is at once produced. After a period more or less prolonged of unhappiness and painful anxiety, resulting entirely from the condition of the perceptive centres, the patient searches objectively for the cause of a condition purely subjective, thus involving the intellectual powers which as yet are intact.

As the disease progresses, however, these intellectual centres become diseased, and an attack of idiopathic mania is witnessed ; this, again, will in time lapse into dementia.

In such a case what is the sequence of events, and in what manner does the moral shock act on the cerebral tissues ? Is it not probable that the too powerful impression deranges the nervous element which receives, changes and diffuses it ?

If the intimate relations of the constituents of the cell are altered, it is probable that nutrition is interfered with, and it is to repair this altered nutrition that treatment must be directed.

The organic lesion coincident with these progressive morbid phenomena consists, in all probability, of a modification of the cellular connections, giving rise to defective selective power, and thus leading to ultimate degeneration. The disturbances of capillary circulation so often seen are rather to be regarded as the epiphenomena of structural changes than as their cause, though undoubtedly there do exist cases where irregular vascular action gives rise to mal-nutrition, and calls for special treatment. Other facts exist which indicate mal-nutrition to be the origin of the whole evil. Thus, autopsies on recent cases give negative results, while in old-standing cases extensive lesions are brought to light ; and again there is the granulo-fatty degeneration so often seen in cases of dementia. As yet treatment has been too exclusively directed to special symptoms, and it is to be hoped that soon a more precise knowledge of organic lesions will show that it is to those agents which modify nutrition that we must look, if our efforts are to prove successful.

The value of the nutritive treatment has already been shown by clinical observation, which has noted how frequently the return of bodily health, under the influence of a regular life and good diet, accompanies the return of sanity.

The importance of diet in the treatment of mental disease has been recognised by many authors. Thus Pinel, Jacobi, Esquirol, and especially Guislain, have dwelt upon the subject ; and others, as Nasse,

Schultz, and Erlenmeyer, have pointed out that in a large number of their cases mental improvement has been associated with increase of weight.

Among the agents which modify nutrition are opiates, and it has been observed by Erlenmeyer and Albers, of Bonn, that in the cases where they have been of undoubted value their administration has been followed by increase of weight. But there are certain cases where large appetite and increasing weight indicate a transit to hopeless dementia, and mark an aggravation of disease.

In recent cases improved bodily condition is rarely unaccompanied by mental improvement, but after a long interval degeneration will have taken place.

In curable cases the body and mind improve together; in incurable cases the latter remains feeble—an evidence that degeneration is present. A large proportion of these latter is made up of General Paralytics.

The careful study of the scientific progress of the times makes it evident that the science of medicine is undergoing a complete change. The advances of physiology are daily tending to the increase of the number of adherents to cellular pathology, and to reduce that of those who cling to the doctrines formerly entertained. It is also evident that as the causes and nature of the lesions become better known the application of drugs becomes more limited, and that of the agents which act on nutrition widened.

While the cellular pathology had greatly aided the study of psychology, yet there remains much which microscopic and analytic physiology has failed to explain.

It is in the nervous system that the results of any dyscrasy may be looked for to become first apparent.

In conclusion, it is of great importance, in certain states of excessive mental excitement, to re-establish the equilibrium between assimilation and waste, as otherwise retrograde changes will produce disorganization of a hopeless description. In melancholia, and certain states of mental depression often seen to be the precursors of various forms of mental disease, it is of special importance to aid the powers of assimilation.

This is also the case in monomania; and even in dementia, though cure is hopeless, the progress of the disease may be retarded.

Classification of mental disease should be founded on the pathological histories of the cases. The purely empirical and artificial are worthy of but little attention.

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*Duret on the Circulation in the Brain.* Abstract, by ROBERT SAUNDBY, M.B.

M. Duret first describes the general arrangement of the vessels at the base of the brain, and remarks that:—

1.—The communicating arteries are not unfrequently very small or

defective, and he suggests that this may account for the occasional fatal result of ligature of one carotid.

2.—The origin of the posterior communicating artery is often from the middle cerebral, in which case an embolus impacted at the bifurcation of the carotid would not permanently impede the circulation in the middle cerebral artery.

3.—There are no anastomoses between arteries of opposite hemispheres in the middle line, and scarcely any between arteries of the same side ; which may account, he says, for the frequency of complications when obstruction does occur. He explains the absence of anastomoses by reference to the development of the hemispheres.

He then describes the vascularization of special parts of the brain :—

1.—The corpus striatum derives its vascular supply in the following manner:—The intraventricular part from branches of the anterior cerebral artery and choroid plexus ; the extraventricular part from branches of the middle cerebral artery, which proceed in a direction from below upwards and from within outwards, corresponding to the frequent form of softenings in this locality. They do not anastomose with any other vessels, and terminate by breaking up into pencil-like tufts of capillaries. The veins are relatively small, hence an increased supply of blood easily produces congestion, and rupture of the vessels if their walls are diseased.

2.—The optic thalamus is supplied by branches of the posterior communicating and posterior cerebral arteries, which go to the intraventricular part ; also by branches of the choroid arteries. The extraventricular part is supplied by branches of the posterior cerebral artery rising near the corpus geniculatum of the same side.

3.—The ventricles contain two orders of arteries :—

*a.* Those of the choroid plexuses which are the remains of the vessels ramifying in the membrane lining the ventricle in the early months of development, but which by contracting on itself lies now only in contact with a small part of the wall, the function of these vessels being to supply the ventricular fluid.

*b.* The vessels derived from the arteries of the velum interpositum, which ramifying on the ventricular walls penetrate them and break up into capillary pencils. These are all derived from the posterior cerebral arteries. The veins corresponding to them are relatively larger in size but fewer in number, and empty themselves into the venæ Galeni, which also receive the blood from the corpora striata, optic thalamus, corpus callosum, septum lucidum, and optic tract.

He compares the vascular arrangement of the brain with that of the cord. In both there are two sets of vessels—one mesial, the other external—and he shews that in cord and brain respectively the mesial and external sets of vessels supply analogous parts. He describes the distribution of the arteries to the convolutions of the hemispheres in detail. Thus :—

I.—*Anterior Cerebral.*

*a.* The anterior internal frontal arteries, small branches given off from which before its division into the three following trunks supply the first superior frontal convolution, the olfactory nerve and its groove, and the olfactory triangle.

*b.* The internal anterior frontal artery supplies the inner and outer sides of the first superior frontal convolution and the outer side of the second superior frontal convolution.

*c.* The internal middle frontal artery supplies the convolution of the corpus callosum and the fissure of Rolando.

*d.* The internal posterior frontal artery supplies the parts adjacent to the calloso-marginal and parieto-occipital fissures in which it lies, and it gives an artery to the corpus callosum.

II.—*Middle Cerebral Artery.*

*a.* The internal inferior frontal artery supplies the third frontal convolution.

*b.* The anterior parietal artery supplies the fissure of Rolando and two adjacent convolutions, and often the first parietal convolution.

*c.* The posterior parietal artery supplies the inferior parietal convolution and the first temporal convolution.

III.—*Posterior Cerebral Artery.*

*a.* The anterior temporal artery supplies the Gyrus Uncinnatus.

*b.* The posterior temporal artery supplies the convolution of the Hippocampus, the third temporal convolution, and the middle occipito-temporal convolution.

*c.* The occipital artery supplies the occipital convolutions, the hippocampi, major and minor, and the quadrate lobe.

He says the arrangement of the vessels in the pia mater is in arborescent groups of capillaries, which groups do not as a rule anastomose with one another, though slight injections have been made from the middle to the posterior cerebral artery of the same side, and from one posterior cerebral artery to the corresponding artery on the other side. Each convolution is not supplied by a special artery. The arteries in the adult are the same as those which existed in the embryo before the convolutions were formed. The increase in the vascular supply is due simply to the growth of the capillary network, and anastomosis is rendered difficult by the formation of the sulci. The veins of the convexity anastomose freely with those of the base, but not very freely with each other. The mode of termination of the vessels in the cerebral substance is thus described :—The vessels are divided into two orders—cortical and medullary.

The cortical arteries are small vessels which ramify in the grey matter, or in the boundary zone between the grey and white matter.

The medullary arteries are large and ramify in the white matter. They are straight, and penetrate at right angles to the surface of the convolutions; when they reach the white matter they curve, so as to run parallel to the bundles of nerve fibre, and give branches to form a pencil-like capillary network.

The cortical arteries penetrate the grey matter only, or as far as the boundary zone, and there break up into a capillary network, which, if exposed by sections parallel to the surface of the convolutions, will be seen to consist of—

a. A layer, a demi-millimetre in depth, of a large rectangular network parallel to the surface.

b. Two millimetres' depth, of a fine polygonal network.

c. One millimetre's depth, of a large network; not so large, however, as that of the white matter.

The capillary network of the white layer consists of fine but elongated meshes three or four times the diameter of the meshes of the grey matter. The veins are also divided into cortical and medullary. He denies the direct anastomosis of veins and arteries which has been stated to occur by Ecker. The veins here, as in other parts, are relatively large, but less numerous than the arteries.

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### 3. *Italian Psychological Literature.*

BY J. R. GASQUET, M.B.

The *Archivio* for 1873 and 1874 contains fewer original papers than usual, though some of them are of particular interest and importance. Professor Verga continues his very detailed and careful account of *General Paralysis*, from which I can only find space to extract the following points. He remarks that inequality of the pupils is not peculiar to that disease, but occurs in all other varieties of insanity connected with organic affection of the brain. Some stress is laid upon the occasional loss of power over other involuntary muscles, of the bladder and intestine, causing ischuria and constipation, which are often relieved by the use of strychnia. It is singular to observe that some paralytics in Italian Asylums cease to open their mouths freely when they speak, as is the custom of their countrymen; but "speak between their teeth, like the English." In other cases, Dr. Verga has noticed that these patients always shout, as if they were speaking to deaf persons, either from not being able to regulate, or from not observing the loudness of their voice. He has also observed that, in the early stage of the disease there is occasionally genital excitement with persistent priapism. He sums up all the causes of general paralysis under the head of abuse of the moral and intellectual powers, or of the cerebral functions. It appears to be increasing in frequency in Italy as elsewhere, taking the place of other forms of insanity, especially in

Lombardy and Piedmont ; but he considers that it has no connection with pellagra, which is such a common disease there, and makes the remarkable statement that no peasant has ever been admitted into his wards in the Ospitale Maggiore of Milan with symptoms of general paralysis ; on the other hand, his experience leads him to conclude that it is very common in the ranks of the medical profession. A dozen cases are narrated in the course of this very interesting paper ; if they are fair samples of the disease as it occurs in Milan, it would seem to run a more rapid course than in England, remissions being rarer.

Dr. Riva publishes some elaborate statistics of the physical conditions of 304 insane patients, examined by him in the Asylum at Pesaro, and compared with similar observations of inhabitants of the same town in good health ; I can only summarise the more interesting results. The healthy average weight of male Pesarese being about 70 kilogrammes (I omit decimals) the insane were found to range below this, the average weight of those suffering from general paralysis (early age) being 66 kilogrammes, from epilepsy 62, from melancholia 61, from mania 60, from acute dementia 58, from chronic dementia 57, from pellagra 56, and from idiocy 49. As to the shape and size of the head, the most prominent facts recorded are : that the head is generally smaller in the insane than in the sane, that the brachycephalic type is proportionately more frequent in the chronic and incurable than in the less grave forms of insanity, and that alterations in the shape of the head are notably more frequent in the occipital than in the frontal part of the cranium (in the proportion of 49 to 36).

Professor Porta, of Pavia, gives a careful description of a case in which, as the result of a severe wound of the head with fracture of the skull, the right central hemisphere sloughed away, leaving only the basilar portion intact. The mental faculties and the senses were unaffected, the only symptoms being paralysis of the left leg, and of the elevators and extensors of the left arm.

Dr. Calastri publishes some additional cases illustrating the influence of an attack of variola on the course of chronic insanity ; 61 cases of the kind have been recorded in Italy, of which 14 recovered from their mental disease after the variola had passed away, 8 were improved, 28 were unaffected, the remaining 11 dying of the acute disease. He suggests that in order to discover whether the beneficial influence of small-pox is due to the disease in itself, or to the prolonged and abundant suppuration accompanying it, patients should be subjected to vaccination, and the effect on the course of their insanity noted.

Dr. Solfanelli, of Rome, gives a very interesting account of the connection between *heart disease* and insanity. He records 17 cases which he has carefully observed, and concludes that there is some evidence to show that the molecular cerebral changes to which insanity

is due, must be owing to alterations in the capillaries in the brain. The circulation in the brain will naturally be affected by heart disease; thus cerebral anæmia will be the result of aortic stenosis, venous congestion and œdema will follow upon mitral regurgitation; but there is no apparent correspondence between the variety of cardiac disease and the form of insanity found accompanying it, and his cases fully bear out this statement.

Dr. Frigerio gives a good description of two cases of what he terms "*Melancholia Cataleptica*," which corresponds rather to our acute dementia than to melancholia attonita; in the latter case, post-mortem examination showed atrophy and hardening of the gray matter of the convolutions. He looks upon this variety of insanity as secondary to melancholia, and considers deficient power of volition as its principal characteristic.

Dr. Verga has been bold enough to propose a *new system of classification* to the Italian Phreniatric Society. He distinguishes the congenital forms of mental weakness ("*Phrenastheniæ*") from the "*Phrenoses*" acquired in after life, and divides these last into the simple forms of insanity, and those complicated with other diseases.

In a lecture introductory to his course at Milan, the same author has taken a more practical subject:—the position of medical experts in the law courts. He complains most forcibly of the manner in which medical evidence in criminal cases is received; and one might almost think he was writing of England and not Italy, when he tells us that an advocate was allowed to say, in the course of a trial, that "he wished for a jury, not of specialists, but of honest men, who knew what they said."

The "*Affare Agnoletti*," a "*cause célèbre*," occupied the law courts of Lombardy in 1872, and, as a large number of specialists were examined, it should perhaps be noticed here, although it seems to present no features of special interest. Agnoletti was tried for drowning his child, found guilty with extenuating circumstances, and condemned to hard labour for life. Eleven specialists were examined at the two trials which were held, and eight of these considered him to be only partially responsible, while three looked upon him as responsible for his actions. According to Dr. Verga's report, the families of both the father and mother of the accused seemed to have had insane members; he was himself known in his youth as "the madman," by which his fellow-townsmen of Ferrara meant to describe his impetuous fanciful character. He rapidly dissipated a tolerable fortune, and having suffered much from his creditors, and being separated from his wife, he determined to drown himself and his child (of whom he was passionately fond) together; but, on throwing himself into the water, he seems to have dropped the child, and made a sudden and instinctive effort at self-preservation. When examined in prison, he seems to have argued that he had a right to

drown the child, and that he only did so to save him from an unhappy life. It would appear from these facts that Agnoletti was undoubtedly of unsound mind, and should hardly have been treated as a criminal without more prolonged observation.

In the course of his report, Dr. Verga makes some excellent remarks upon "moral insanity," which he describes as being "a subalienation of mind, standing in the same relation to insanity proper as varioloid does to variola. The mistaken lives of most of these persons are like some ill-arranged texture of which the warp is vanity and triviality, and the woof impetuosity and violence; according as one or the other of these prevail, they end in the prison or the Asylum."

It would appear that *drunkards* in Milan, when found in the public streets, are taken to the great Hospital, and placed in the insane wards there, when they are maniacally violent or comatose. Delirium seems to be more common than in England (viz., 336 cases out of 725); a circumstance I have also noticed in France. In one case of death during drunkenness, Dr. Verga found thrombosis of the cerebral veins.

The Italian authorities seem to require much persuasion to induce them to establish a *Criminal Asylum*, although the disturbance to the discipline of ordinary establishments, and the injury done to other patients, by their association with criminal lunatics, are clearly set forth by several writers, particularly by Dr. Capelli.

*The Rivista Clinica di Bologna* contains much matter of interest, which I am reluctantly compelled to pass over, because it has no connection with our specialty; but I am able to notice briefly the following papers. Dr. Frigerio has tested, by means of the dynamometer, the *muscular strength* of 325 lunatics, 241 criminals, and 52 other persons. Cases of idiocy, melancholia, and dementia stand lowest in the scale, then come epilepsy, general paralysis and mania, while cases of monomania give a higher general average than criminals, who stand considerably lower than the 52 other persons. It may be doubted how far such examination is possible and, whether melancholic or idiotic patients can be induced to put forth all their strength; so, too, whether criminals do their best under such tests; but at any rate, the statistics are interesting.

Dr. Lombroso gives 8 very carefully observed cases of *microcephalic idiocy*. Certain pithecoïd characters were notable in all of these; thus, the teeth were fixed obliquely in the jaw, the glenoid fossa was altered in direction, the occipital foramen was turned backwards; on the other hand the frontal crest seen in the simian races was not observed, nor were the curved temporal lines, which are so marked in the negro, while in one case the incisors were absent, and in another a large osseous tubercle projected from the basilar apophysis, both of these peculiarities corresponding to nothing analogous among the

apes. The skull was remarkably thin in one case, contradicting Vogt's statement that it is thickened in such conditions, and in another case (25 years of age) all the sutures, even the spheno-basilar, remained open, thus weakening Virchow's hypothesis, which ascribes microcephalic deformity to premature closing of the sutures. The peculiarities noticed in the rest of the body were, some of them, simian in character, as the increased length of the fore-arm and phalanges, and the great development of the external ear; but most of them seem to point rather to the negro race (yellow colour of the skin, prognathism, square shape of ear, retreating chin). One of these idiots resembled an ape in his habits, but the rest did not, and another (who had received the nick-name of the "man-rabbit") had many of the habits of rodents, although it appeared that he had had no opportunity of imitating them; thus he stamped with one foot when frightened or when beginning to walk, he would not sit down, but propped himself in a corner of the room; his favourite food was uncooked green vegetables, which he ate like a rabbit.

Dr. Raggi describes a form of *Keratitis* as frequent in cachectic lunatics, particularly in cases of pellagra which are tending to a fatal issue. An opacity is perceived on the cornea, which in a few days spreads through its whole thickness; softening follows, when the aqueous humour escapes, and the iris projects; both eyes are usually affected in succession, without any apparent pain. He looks upon this affection as "neuro-paralytic," produced in the same manner as the corneal ulceration which follows experimental section of the trifacial. Since in this artificially produced keratitis protection of the eyes preserves them from destruction, he has tried keeping them firmly closed by bandaging, in the first appearance of the disease, and he finds it the only serviceable treatment. He might have supported his practice by Trousseau's precisely similar experience of the ulcerative keratitis which occurs during the course of enteric fever.

We have received the prospectus of a new periodical, the "*Rivista Sperimentale di Freniatria e di Medicina Legale*," which is to be published every two months at the Asylum of Reggio-Emilia, under the direction of Professor Livi, whose name has been frequently mentioned in these pages. It will be devoted to the practical study of insanity and of forensic medicine; the staff of contributors appears to be a very strong one, and we trust, therefore, that it may have a long career of usefulness before it.

J. R. G.

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#### 4. *American Retrospect.*

By JOSEPH J. BROWN, M.B., M.R.C.P.E., Assistant  
Physician Royal Edinburgh Asylum.

*American Journal of Insanity* (July).—Dr. John P. Gray gives a condensed account of his pathological and microscopical investigations of 52 cases of insanity. He states that the vessels, nerve cells, and

neuroglia undergo changes before marked impairment of the nerve conducting element can be detected. Increase of interstitial matter, multiplication of connective fibres, and diminution of connective nuclei, are prominent features of change. In chronic cases the increase of neuroglia takes place more in the gray matter than in the white, and is more marked in the anterior regions of the brain. This increase may be in connection with the capillaries, or more generally it occurs in localised regions, and circumscribed in walls formed by condensed minute connective fibres. These masses are granular, friable, and ultimately may become serous. They originate in the interstitial elements, and by mechanical pressure cause absorption of cells and fibres. The cavities thus formed constitute the Gruyère cheese appearance, and are to be distinguished from cavities formed by hemorrhage, by the absence of blood-staining of the surrounding tissues, and by their non-connection with vessels. In general paresis the first changes begin in the vessels, thus accounting for epileptiform attacks. The change is first noticed in small portions of the adventitious coat of the arterioles and larger capillaries, and may go on to involve ultimately the whole circumference of the vessels. The nerve elements next to the vessels become affected by multiplication of connective fibres and molecular granulations. In epileptic insanity pigmentation of the multipolar cells was a well-marked and constant lesion. In an acute case of syphilitic insanity profound fatty degeneration was observed besides the other lesions of acute insanity. In every instance the capillary system was affected, and appeared to be so primarily, though this was best observed in the epileptic and syphilitic cases. The fundamental elements were atrophy, and a hypoplasm; but in acute cases the atrophy occurs more rapidly, and without the formation of lymph, thus indicating the non-inflammatory character of the process. The Doctor next discusses colloid degeneration, and goes on to state that his investigations prove what most pathologists recognise—that the lesion in insanity commences first in the vessels, and secondarily the cells, fibres, and neuroglia become affected in consequence of the disturbed nutrition. In support of this view the author quotes a case of mania of a few days' duration, where granular masses (corresponding to the granule cell of the Germans) were observed both on the inner lining of the vessel and between the wall and the lining to an extent sufficient to cause thrombosis. In another case of longer duration this condition was seen to a still greater extent, not only being confined to the vessels, but scattered through the brain substance, and assuming the form of colloid bodies. The amyloid bodies formed in chronic insanity, and situated along the course of the vessels, furnish another proof of where the lesion first commenced. These changes interfere with the blood supply, consequently we have the other elements becoming affected. Should these granular bodies become absorbed recovery takes place, but if, on the other hand, they do not get absorbed, or if they increase,

then chronic insanity is the result. Dr. Gray also points out the great similarity of the histological changes in the different forms of insanity, and from this fact is inclined to think that we have most likely only one diathesis to contend with, manifesting itself under different phases in its progress and results. From his observations he concludes that insanity is a physical disease of the brain, and that the mental phenomena are symptoms; also that the variety and changes of these symptoms are to be explained, not by the variety of the lesions, but by the special parts of the cerebral centres affected.

The October number of this journal contains a full report of the proceedings of the Association of Superintendents, and amongst various papers read is one by Dr. Ranny on "The Use of Restraint in the Treatment of the Insane." He is fully of opinion that without the use of moderate restraint it would be impossible to manage an asylum with any comfort or credit, and this view was fully approved by the majority of the Association. The Doctor states:—

With strong inclinations towards non-restraint, or to the least practical use of restraint, it has not seemed to be quite wise, although possible, to dispense with it altogether. Every now and then cases arise, in the treatment of which it proves to be a valuable, if not indispensable auxiliary in the treatment. In active mania, so common a form of insanity in this country, characterised by violent, destructive, and mischievous propensities, and a remarkable insensibility to moral influences, personal kindness, and everything that may be done for their welfare, as well as to almost every sense of delicacy and refinement, we may see, after weeks of useless effort in all other directions, upon the application of some mild form of restraint—the camisole, or a strong linen frock with continuous sleeves, or the use of the crib bed—the boisterous state exchanged for one of great composure, the attention more easily attracted into healthier channels, the mental operations become more coherent, and physical reaction more natural, while the brain and nervous system get the needed rest, the physical functions are better performed, and thus a state of progressive improvement inaugurated. In the case of suicidal patients, such restraint as is implied in the use of the covered bed, or crib, seems to me eminently appropriate at night, and affords a full equivalent for watching, or other supervision, and it is less liable to abridge sleep than any other measures, affording the needed security.

The Association discussed the beneficial effects of various medicinal remedies, and from what can be learnt of the different opinions of the members chloral hydrate seems to be their favourite hypnotic, though regarding the safety of its administration some gentlemen are very dubious. The *Rhamnus Frangula* is also a medicine much used, its action being laxative and tonic; Dr. Andrews uses a fluid extract of the drug, and finds it most beneficial in cases of habitual constipation.

*The Psychological and Medico-Legal Journal* for August.—Dr. Hammond [on Morbid Impulse] relates a series of very interesting and illustrative cases, and states that Morbid Impulse may arise, 1st. from *suggestion*; under this division he quotes a case of a gentleman destroying the dresses of several people with sulphuric

acid, the destroyer acknowledging that the handsome dress acts much as a red cloth does to an infuriated bull. 2nd.—The impulse may arise from *imitation*; this cause is a very pregnant source of Morbid Impulse and is well illustrated by the case of the medical student committing suicide by wounding the femoral artery, and being imitated by Horace Wells, suggestion being the cause of the first, imitation that of the second. 3rd.—The Impulse may be due to *habit*. Under this division the author says, that after a morbid impulse has once been felt or yielded to it becomes more difficult to control, and he goes on to quote the case of a lady, who, after experiencing pleasure in seeing a shoe burn in the fire, felt an uncontrollable impulse to burn something else, and gradually yielded to the desire until she became most destructive and ruinous. 4th.—Hereditary tendency is a cause not so much in its direct transmission, but the children of parents suffering from some form of nervous disease, may manifest the hereditary taint in the form of morbid impulse. Regarding the treatment, Dr. Hammond finds that in some cases where impressions stronger in their influence than the morbid impulse can be made upon the minds of the affected individuals the impulse is subdued. Judicious discipline is also believed to be a most beneficial form of treatment, more particularly in homicidal impulse. The morbid impulse may also in some cases be overcome by some analogous but harmless occupation in which the impulse expends itself.

The same Journal for July contains an article by Dr. Hammond, on the effects of alcohol on the nervous system, in which he demonstrates by experiments on himself and on dogs its physiological effects, which are briefly summed up under three heads, viz:—

1st. Period of excitation—uncertainty in the movements, acceleration of the pulse and of respiration, contraction of the pupils. 2nd. Period of perversion. Muscular paralysis, beginning in the posterior extremities; irregularity of pulse and respiration; dilatation of the pupils. 3rd. Period of collapse,—complete paralysis of motion, anæsthesia, feebleness of the pulse and of respiration, stoppage of respiration and of the heart's action; death.

He believes alcohol to be a food, in that it retards the destruction of the tissues; and also demonstrates that it has an affinity not only for the brain and spinal cord, but also for the nerves of the body, and having this special affinity for the nervous system, its abuse leads to diseases of the most varied nature. Acute alcoholism, the author states, is of two varieties, the one is due to blood poisoning from excessive use of the article; the other results from the sudden withdrawal of it, when the system has become habituated to large doses. In the first form we have frequently convulsions occurring, which we do not find in the second. Regarding the treatment of the first variety, stimulants ought not to be given, but good diet, and such remedies as will act on the excretory organs, to eliminate the

poison from the system; while in the second variety, moderate stimulation is beneficial, by means of alcohol, opium, or both combined.

Chronic alcoholism is divided into four groups; the first is characterised by tremor and unsteadiness of the upper extremities, subsequently the lower extremities, and then the muscles of the trunk, the phenomena being most marked in the morning. This type corresponds to Huss' paralytic form of chronic alcoholism. The 2nd group is the anæsthetic form, and is distinguished by perverted or lost sensibility, first of the extremities, afterwards of the trunk. With the anæsthesia there is also more or less loss of motor power. The affection is frequently only found on one side of the body, and the author gives an illustrative case, where paralysis of sensation of one half of the tongue existed, while that of the other half was normal. The 3rd form is characterised by convulsions, generally accompanied by impaired sensibility and tremor as well. The 4th and last variety is characterised by hyperæsthesia of the skin and other special organs of sense. Though in all the forms we may have anomalous symptoms yet the intellectual qualities rarely remain intact; thus, we have delusions, illusions and impulses of the most dangerous nature, accompanied by headache, vertigo, sleeplessness, &c., all of which give evidence of the extent to which the nervous system is affected. The author then relates a series of pathological conditions the result of excessive use of alcohol, and concludes his paper by some remarks on the value of alcohol as a medicine, when used with care and caution.

The October number of this journal contains a short paper by Dr. Hammond on the action of sulphate of quinine on the intra-cranial circulation. From experiments on himself and on animals, sufficient facts are obtained to prove that this drug causes cerebral hyperæmia. As the experiments are of much interest and value we give them fully:—

I resolved to take quinine myself, and to have my friend Dr. Roosa, whose abilities, as an ophthalmologist and aurist, are indisputable, examine the fundus of the eye and the tympanum before administration of the quinine, and during the continuance of its effects. The report in his own words is as follows:—

Vision normal	-	-	-	-	$\frac{20}{20}$
Refraction	-	-	-	-	Emmetropic
Pulse	-	-	-	-	90

Ocular conjunctivæ white, decidedly free from hypæmia, Palpebral congested at outer and inner canthus. Has no tinnitus aurium. Membrana tympani entirely free from evidence of vessels. No congestion along handle of malleus. Ophthalmoscopic examination of both eyes reveals a remarkable clear optic papilla on both sides. Arteries and veins, vertical and horizontal vessels clearly cut, and whole popilla sharply defined, rather paler than congested.

Took grains x sulphate of quinine at 8.30. p.m. At 9 p.m. ocular conjunctiva is congested at outer and inner canthus. Palpebral conjunctiva markedly congested over whole surface. No change in optic papillæ or drum heads. 9.15. Surface of optic papilla pinkish; arterial vessels seem more distinct. No change in appearance of drum heads, no tinnitus aurium. 10. Head feels full, left ear rings; auricles burn; face is decidedly flushed; auricles red, especially lobe of right, where

there is localized congestion that is so marked as to resemble an ecchymosis. There is now a vessel along each malleus; optic papillæ are pinkish. Pulse 84 and fuller. 10.30. p.m. Right drum head is very much injected along handle of malleus and upper margin. Left less so, but yet injected. Both papillæ very pink, left more so than right. Face flushed, eyes suffused, ocular conjunctiva decidedly congested. Slight head-ache; tinnitus in both ears. 11. Redness of auricle diminishing, especially the circumscribed spot on lobe of left one; face still flushed, tinnitus continues; no headache; feels exhilarated. Drum heads still injected along malleus; not more so, however, rather less; optic papillæ have a decidedly pinkish hue; no more lateral vessels seen, however; right is especially pink; tinnitus still continues; vision normal.

To determine the question with even greater certainty the doctor says—

I trephined a medium-sized dog, and screwed a cephalo-hæmometer into the opening in the skull made by the trephine, so that the fluid in the glass tube stood at zero. I then introduced into the cellular tissue two grains of sulphate of quinine, dissolved in water acidulated with sulphuric acid. This was done at half-past 3 o'clock p.m. At 3.35 the fluid had risen one degree on the scale. ( $= \frac{1}{10}$  inch.) It continued to rise gradually but steadily, till at 4.10. it had passed over ten degrees ( $= 1$  inch of the tube). At 4.30., one hour after injection of the quinine, the fluid was at  $+ 15^{\circ}$ . It continued at this point till 5.10., when it began to fall, and at 8.15. was at zero. It remained stationary for over an hour, at no time falling to the minus division of the scale. The stage of excitement scarcely lasted 15 minutes. It was succeeded by a state of sedation, during which the salivation was excessive, and the animal appeared very much as if under the influence of a full dose of alcohol. As the normal condition of the dog was regained, the fluid fell in the tube, and reached zero almost simultaneously with the disappearance of the symptoms of intoxication. I repeated the experiment on different dogs with variable doses of quinine, from two grains to fifteen, in all four times, and invariably with the result of a steady rise of the fluid in the tube as the effect of the drug increased, and its fall to the zero as the influence wore off. At no time did the fluid reach a lower point than that at which it stood before the administration of the quinine.

## PART IV.—NOTES AND NEWS.

### MEDICO-PSYCHOLOGICAL ASSOCIATION.

A Quarterly Meeting was held on the 27th ult., in the Rooms of the Royal Medical and Chirurgical Society; Dr. ROGERS, the President, was in the chair.

#### POST-MORTEM EXAMINATIONS IN NEWGATE.

The Secretary, Dr. W. RHYS WILLIAMS mentioned that he had applied to one of the Surgeons of Newgate for permission to examine the brain and spinal cord of a man hanged for murder, in whose case the plea of insanity had been set up. The answer was, that the Surgeon himself was willing to allow it, but there was an order from the Secretary of State that no post-mortem examination of criminals who were hanged should be made.

Dr. MAUDSLEY thought it possible that this regulation might apply to outsiders only, and that Mr. Gibson, the Surgeon of Newgate, might make an examination if he thought fit. In the case to which Dr. Williams referred, it was not likely that the brain or spinal cord would have shown anything. He (Dr. Maudsley) had a long conversation with the man, and could find no sign of insanity about him, and no evidence whatever of insanity in the account which he gave of the circumstances

under which the crime was committed. In fact, he and the woman, who was his victim, had been going from publichouse to publichouse all the morning, drinking, on the day of the murder. He therefore declined to appear and give evidence at the trial.

Dr. WILLIAMS had heard the evidence given at the trial, and had formed the same opinion.

Dr. BLANDFORD observed that—If such a rule now existed at Newgate, it had not always been so; he remembered having made a post-mortem examination there fifteen years ago, just after the man was hanged. It was the Sheriffs who had to grant permission.

The SECRETARY undertook to inquire of Mr. Gibson concerning the rule, before inviting the Association to express an opinion about it.

#### EXCESSIVE OPIUM TAKING.

Dr. RAYNER had a case of this kind to relate; that of a man who had been in the habit of taking four ounces of laudanum daily, and had become suicidal, threatening to strangle himself. He had been taking nearly his full quantity up to the time of his being placed under Dr. Rayner's care. It was stopped at once; the man at first slept only three or four hours each night, but in the course of a fortnight or three weeks slept quite naturally; by the end of five weeks he had gained 23lbs in weight, and was convalescent, expressing his determination not to return to the practice. This man was fifty-eight years of age, but his father, who was still living, and was nearly ninety, had been an opium-eater to a large amount nearly thirty years. It was interesting to observe that the man suffered very little from suddenly leaving off his opium.

Mr. G. THOMPSON described a case in which chloral had been used with success for a patient suffering from general paralysis, who had been accustomed to take three drachms of Batley in the morning, and the same quantity at night. He now took only two drachms in the morning, and ten grains of choral at night, and was very much better, with regular and comfortable rest.

Dr. IRVINE related the case of a medical student he knew, who used to take an ounce of tincture of opium in the morning, and three ounces in the evening. He once took eighteen ounces in one day; and Dr. Irvine once came upon him in the act, and saw him then swallow, in the druggist's shop, six ounces of laudanum and two ounces of chloroform. This young man became perfectly delirious when he got no opium. Dr. Irvine narrated some particulars of his sad history.

#### PHYSIOLOGY OF GENERAL PARALYSIS OF THE INSANE AND EPILEPSY.

Mr. G. THOMPSON read a paper upon this subject.

(See Part I.—Original Articles.)

A discussion ensued, which was commenced by Dr. Savage with some remarks on the worthless indications of certain pulse-tracings, where the lever, merely resting on the artery, just showed its rise and fall. It was thankful to have a graduated pressure, as in Mahomed's instrument. He had to thank Dr. Rayner for pulse-tracings of eight chronic cases, and sixteen or eighteen more acute cases, such as were common in Bethlem. In the past year he had also taken periodical pulse tracings of twenty-five fresh cases in Bethlem, but had not been able to get anyone that was characteristic of general paralysis. There was, certainly, general paralysis of different kinds; that of the insane, and of the not insane, purely senile in some cases, but running a rapid course in others, within six months. What was found by examination after death, in such cases, was the *debris* of various components of the ruined nervous system, like the mixed ruins of a house burnt down. He could scarcely accept Dr. Thompson's view, that serous effusion caused the wasting in senile dementia. Indeed, the idea of serous apoplexy was now given up.

Dr. RAYNER referred to an observation which Mr. Thompson had made about the condition of the optic disc in general paralysis. He had, with the assistance of a very competent person, examined forty or more cases of this; and the result was that, instead of there being any anæmia, there was more vascularity, or quite as much as is usual, except in some of the old cases.

Dr. BLANDFORD thought it something new to hear that the condition of general

paralysis was one of cerebral anæmia. He had rather considered it to be, in its earlier stages at any rate, a condition of hyperæmia, accompanied by excitement for a period. This was borne out, too, by all the post-mortem appearances. All those twistings of the arteries, and aneurisms, which were discovered, seemed to show a hyperæmic condition, one of great vascularity. Mr. Thompson had spoken of the curative effect of Calabar bean. But from the West Riding reports, as he (Dr. Blandford) read them, it appeared that Calabar bean was used to correct the state of hyperæmia, and to reduce the action of the heart. Its effect had been to produce fainting in one case, while the patient was out for a walk.

Dr. MAUDSLEY regretted to hear the observations of Dr. Hughlings Jackson spoken of in the manner Mr. Thompson had referred to them. There could not be a more accurate observer, or one more sincere and enthusiastic in the cause of science, than Dr. Jackson; and his observations were far from being influenced by any theory. It was the more inconsistent to make those reflections, while lauding Dr. Ferrier for his experiments, which were first made in consequence of the pathological observations previously made by Dr. Jackson, as to the seat of the morbid lesions in epilepsy. He (Dr. Maudsley) did not understand that the term "discharging lesions" was meant to imply any particular theory, but it was used simply as descriptive of the phenomena. It was so far good as there was an actual discharge of some sort. Mr. Thompson seemed to consider that the lesion in epilepsy was the result of a hardening of the neuroglia, and that the fit was occasioned by a disturbance of the circulation from the unyielding nature of those tissues. Yet, in the same breath, he argued that this hardening was not the cause of the disease, but its effect. How then were the first fits caused? Although he (Dr. Maudsley) had not made any particular observations as to this point, his impression was, that only in the far advanced cases of epilepsy, or epileptic dementia, where the epilepsy had continued a long time, was this hardening of the neuroglia to be found.

Dr. BOYD reminded the members of the Association that he had read a paper on this subject four years ago. The principal lesions which he had discovered in post-mortem examinations of the cases referred to were those of the spinal cord. But all the tissues of the body were no doubt more susceptible of injury than in the ordinary condition. This was probably the cause of that brittleness of the bones, which appeared in some of the cases of fractured ribs that had brought scandal on asylums.

After a little further conversation, Mr. THOMPSON replied, noticing first the strictures of Dr. Savage upon his use of the sphygmograph. He had used it for the last eight years, with all improvements or modifications yet known. In every case, he had taken care to estimate the exact pressure, and had applied a higher or lower pressure when there was no satisfactory result. He had never got an actual tracing of the pulse of a patient in general paralysis under the effect of administration of Calabar bean. But he could, with the same pressure, get a different pulse-tracing from the patient at different hours of the day; and there would be a great difference shown for half-an-hour after taking such a stimulant as one glass of beer. In general paralysis, as Dr. Savage had said, the symptoms were those of premature aging; but this was due to mal-nutrition from the obstruction of the vessels. The observations concerning the optic discs, which had been called in question, were those of Dr. Clifford Allbutt, who had most carefully and patiently investigated the subject. He wished Dr. Rayner could see how those observations were conducted at the West Riding Asylum. With reference to one of the remarks of Dr. Blandford, he did not admit that in every case where there was excitement, there was always hyperæmia. As for the effects of Calabar bean, he did not remember any case at the West Riding Asylum, while under his charge, of a patient fainting from it. He thanked Dr. Maudsley for noticing the paper he had read, and agreed with him in the justice of his tribute to Dr. Jackson. Still, he could not understand the use of the term "discharging lesion" as it had been used. Dr. Ferrier, for his part, was careful that there should be no lesion in the cases which he reported upon. When they saw the condition of the neuroglia at the end of an epileptic fit, it might fairly be supposed that the same condition existed at the beginning, and that this was, itself, the cause of that fit and of previous fits. He preferred looking to these indications, instead of to what might be seen after death. He would only add, with regard to Calabar bean, that he did not give it during excitement, but when the excitement was over, and he was sure that it did good. Before it was used, within the first seventeen months of his being there, not one patient of a certain class who was there when he came was left alive; but since Calabar bean was given, some had lived three or four years. It had, therefore, at least the merit of prolonging life.

## SUDDEN RECOVERY FROM MELANCHOLIA.

Dr. W. RHYS WILLIAMS had to describe two remarkable cases of sudden recovery after a long attack of melancholia. The first was that of E. G., female, 49 years of age, admitted into Bethlem Hospital, in February, 1870. She had had an attack of one month's duration 22 years ago, and had been confined in two lunatic asylums. She had attempted to destroy herself by throwing herself out of window. She was very much emaciated, sallow, and extremely weak. As she refused to take any food it was doubtful whether she could be kept alive, but she was fed by force with a stomach pump during four months. In July her condition was slightly improved. In September it was decidedly improved, and she had gained flesh. She continued about the same in November. During the whole year, 1871, she seemed much the same; and up to September, 1872, there was no real improvement. But in January, 1873, without any warning, there was a sudden change. She then appeared perfectly well in mental condition; her bodily health, too, from that time steadily improved. She was kept till June, and was then discharged as a case of recovery. This was remarkable after her strong exhibition before of suicidal despondency, when she used to put her head on the floor and try to break her neck. The second case he would mention was that of a single woman, who had been a schoolmistress, admitted in November, 1873. The cause of her derangement was mental anxiety. In January, and during the next four months, there was no improvement; and in May they were still feeding her with the spoon or stomach pump; but, on the 5th of November, she suddenly became quite well and cheerful, speaking easily and naturally. She had continued well, and was now discharged as cured. These two cases offered some features of interest. There was, in each case, a very sudden recovery, and the mental delusion lasted only for a term. In these cases it was manifest the injury could not have been of a destructive character, but functional or dynamic. Another case had been described of a patient who, during four years, had been forcibly dressed, fed, and cared for, but suddenly woke up cured. Again, there was a case of five years' standing, which took such a turn, resulting in a greatly improved mental condition. In these cases, however, Sir William Gull thought there was a large element of hypochondria, and the patients were not really insane. But hypochondriacs did not commit suicide; and there had been frequent attempts at suicide by those patients he had in Bethlem. He did not put much faith in any special medical treatment of such cases by the administration of drugs. Electricity, indeed, had been tried with much benefit. But it had often been suggested that the true method was to bring strong mental emotions to bear on the patients, and though it was not easy to do this, the chief hope must be in moral treatment. He would merely add, with regard to feeding the patients who refused food, that various means were in use, but he preferred the œsophagal tube, or sometimes the stomach pump. It was wise not to make this feeding too agreeable an operation. By letting it be felt to be irksome, the resistance of the patient might perhaps be overcome.

The CHAIRMAN was reminded, by one remark of Dr. Williams, that at a meeting of the Clinical Society there was a discussion whether a disease was melancholia or hypochondria. His own notion was, that the term hypochondria ought to be eliminated entirely from their nosology. Patients were insane or were not insane, but nobody who had hypochondria should, therefore, be described as insane. A case of speaking all at once, after a long silence, had occurred in a Russian sailor, or rather a Finn, who was under his own care. During two years and a half this man never spoke, and was supposed to be a Welshman; it was said that he had been in that condition during five years before. But he suddenly broke out in speech of a strongly abusive tone, and talked all day long for several days.

Dr. MAUDSLEY recollected the discussion of the case referred to at the Clinical Society. There was no more reason for calling it hypochondria than any other case of ordinary melancholia; the man had delusions, and thought sometimes that the birds were staring at him; sometimes that he was in hell, and that the people around him were devils. As for cases of sudden recovery, it would be important to learn the experience of physicians on the question whether such recoveries were permanent. He should, at one time, have felt inclined to say that sudden recoveries were not more to be trusted than sudden conversions; but his opinion was now somewhat modified. He related two instances which were quite in point.

Several cases bearing upon this question were mentioned by Dr. SAVAGE, Dr. ELGER, and one or two other members. One was that of a lady who became insane

in the seventh month of pregnancy, and who, within a few minutes of her delivery, recovered for the time, but fell into deep melancholia in less than five hours afterwards; she was several months in Bethlem. There was, on the other hand, a woman with melancholia at St. Luke's, who recovered on being told of the death of her child, and who is now well at home. Another patient was accidentally scalded by the hot water tap in a bath, and was quite cured from that moment of her mental disorder.

The members of the Association had an opportunity of inspecting, through microscopes on the table, several different sections of spinal cords in the conditions of health and of general paralysis.

Dr. SAVAGE produced these for exhibition.

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### Correspondence.

*To the Editors of the Journal of Mental Science.*

SIRS,—In reading the report of the Quarterly Meeting of the Association held in Edinburgh in November, printed in the January number of the Journal, I find, in the discussion of Dr. Ireland's paper on Mahomet, an opinion ascribed to me which I certainly did not mean to express, viz.: that the prophet's "supposed revelations were not due to Epilepsy." It appears to me that the idea of the divine mission of Mahomet originated in an Epileptic trance, or some closely allied condition; and that *many* of his subsequent revelations had a like origin.

I am, &c.,

JAMES C. HOWDEN.

Montrose Royal Lunatic Asylum, March, 1875.

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*To the Editors of the Journal of Mental Science.*

GENTLEMEN,—As an article on the Physiology of General Paralysis and Epilepsy by Mr. George Thompson, of the Bristol City Asylum, which appeared in the January number of the Journal of Mental Science, and a continuation of that article which was read at a recent meeting of the Medico-Psychological Association in London, have, I understand, created very false impressions as to my views, I should be glad to have an opportunity of stating that on the subjects discussed in that paper and on that occasion I differ, and have always differed, from my friend, Mr. Thompson, *toto cœlo*.

Mr. Thompson has fallen into a grievous error in representing me as having confidence in the Calabar Bean as a *cure* for General Paralysis. Were I capable of such optimism, my opinion would be of little moment. While claiming for the Calabar Bean a valuable power of modifying and arresting the progress of that most persistent malady, I have never suggested that it should be regarded as a cure. Mr. Thompson will doubtless be surprised to hear that the two cases of general paralysis to which he refers, which appeared in the "British Medical Journal," and in which recovery seemed to take place under treatment by the Calabar Bean, were published in the form which they there assumed without my knowledge or sanction, and indeed much to my regret. I shall take an early opportunity of setting forth explicitly my notions about the pathology of general paralysis (which is, I presume, what is meant by its *physiology*;) and my experience in the use of the Calabar Bean, and in the meantime I must ask your permission to protect myself from misconstruction by a general disavowal of any agreement with Mr. Thompson, on any point that arises in his contribution to your pages.

I am, Gentlemen,

Your obedient Servant,

J. CRICHTON BROWNE.

West Riding Asylum, Wakefield, March 17th, 1875.

*Appointments.*

BEACH, FLETCHER, M.B., Physician's Assistant at Bethlem Hospital, has been appointed Medical Superintendent of the Clapton Asylum for Idiots.

BROWN, W. J., M.B., has been appointed Assistant Medical Officer at the Borough Lunatic Asylum, Newcastle-on-Tyne, *vice* Levinge resigned.

CARRE, GEO. E., M.B., B.A., L.R.C.S.I., has been appointed the Resident Medical Superintendent of the Castlebar District Hospital for the Insane, having been previously the Visiting Physician of the Letterkenny District Establishment.

CONNOLLY, P.R., M.D., M.A., has been appointed Resident Medical Superintendent of the Waterford District Hospital for the Insane, in which he had held the office, since 1856, of Visiting Physician.

ELLIS, J. L., L.K.Q.C.P.I., L.M., has been appointed Assistant Medical Officer to the North Wales Counties Lunatic Asylum, Denbigh, *vice* Powell, resigned.

FLETCHER, ROBERT V., L.R.C.P. Ed., has been appointed the Medical Superintendent of the Ballinasloe District Hospital for the Insane, having been transferred to it from the Waterford District Institution, on the death of the late Richard Eaton, M.D.

FOOT, R. H., M.D. Trin. Coll. Dub., L.R.C.S.I., has been appointed Assistant Medical Superintendent of the Fife and Kinross Lunatic District Asylum, Cupar, *vice* Mackenzie resigned.

HIGGINS, W. H., M.B., C.M., M.R.C.S.E., has been appointed Assistant Medical Officer to the Derby County Lunatic Asylum.

INGLIS, THOS., L.R.C.S., has been appointed Assistant Physician to the Royal Edinburgh Asylum.

LEVINGE, E. G., A.B., M.B., L.R.C.S.I., has been appointed Junior Assistant Medical Officer of the Hants County Lunatic Asylum, Knowle, Fareham.

PITTS, Mr. B., has been appointed Physician's Assistant at the Bethlem Royal Hospital for Lunatics, *vice* Beach, appointed Medical Superintendent of the Clapton Asylum for Idiots.

POWELL, E., M.R.C.S.E., has been appointed Second Assistant Medical Officer at the Essex Lunatic Asylum, Brentwood, *vice* Shone, resigned.

SECCOMBE, G. S., L.R.C.P.L., M.R.C.S.E., has been appointed Assistant Medical Officer to the Metropolitan District Asylum for Lunatics, Caterham, *vice* Younger, appointed Apothecary to the Middlesex Lunatic Asylum, Hanwell.

YOUNGER, E. G., L.R.C.P.L., M.R.C.S.E., has been appointed Apothecary to the Middlesex Lunatic Asylum, Hanwell, *vice* Williams, appointed Medical Superintendent of the North Wales Counties Lunatic Asylum, Denbigh.

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A GOOD APPETITE.

An unfortunate lunatic, who died in the Prestwich Asylum on the 18th ult., seems to have lived not wisely but too well. A post-mortem examination led to the discovery of no fewer than 1,841 articles in his inside—namely, 1,639 shoemaker's sparsables, 6 4-inch cut nails, 19 3-inch cut nails, 8 2½-inch cut nails, 18 2-inch cut nails, 40 ½-inch cut nails, 7 ¾ inch cut nails, 39 tacks, 5 brass nails, 9 brass brace buttons, 20 pieces of buckles, 1 pin, 14 bits of glass, 10 small pebbles, 3 pieces of string, 1 piece of leather three inches long, one piece of lead four inches long, and one American pegging awl—the total 11lbs. 10ozs. It seems strange that any man's state of mind should be such that he could take as much pleasure in eating the contents of a rag-and-bottle shop as of a butcher's or pastrycook's establishment; but the story shews that if, as often alleged, the equilibrium of the mind is to a great extent dependent on the digestion, so the converse is true, that the

appetite is, more than we are aware of, dependent on the condition of the brain. This poor lunatic, who gormandized on rusty nails, broken glass, and other rubbish, was probably little more mad than many other persons who habitually eat food, if not "unfit for human consumption," at least so injurious to the constitution that it causes premature death. If an alderman, for instance, were really in his right senses, he would not live on turtle and punch; it is because he is guided by appetite rather than by reason that he is so often afflicted with gout, and dies, universally respected, no doubt, but still before his time. The guests at any large dinner party are, as a rule, equally "crazed." They do not, it is true, swallow their knives and forks, or feed in quite such an extravagant fashion as the Prestwich lunatic, but the difference between him and them in the matter of sanity as regards their appetites and diet is a mere question of degree.—*Pall Mall Gazette*.

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#### SALARIES OF OFFICERS OF PUBLIC INSTITUTIONS.

At the monthly meeting of the Governors of the Clare District Hospital for the Insane on Saturday, the 13th of March, several applications of officers and servants of the Institution came under consideration. After considerable discussion, the applications were refused *in toto*, and the following resolution, proposed by Lord Dunboyne, and seconded by Lord Inchiquim, adopted unanimously:—"That in future if any officer or servant of Ennis Lunatic Asylum proposes to make an application for increase of salary, he should make such application on the 1st February each year, and that it should be accompanied with the resignation of the office."

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CORRECTION.—In Dr. Ireland's article on "The Hallucinations of Mahomet and others," in the last number, read *corpora quadrigemina* for *optic thalami* in the reference to Dr. Luy's Theory of Hallucinations.

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#### THE W. AND S. TUKE PRIZE ESSAY.

Some of the descendants of WILLIAM and SAMUEL TUKE (the former of whom proposed the establishment of the York Retreat in 1792, and the latter wrote the "Description" of the humane system of treatment commenced there) having placed at the disposal of the Medico-Psychological Association the sum of One Hundred Guineas, the Association offers a prize of this amount for

"The best series of original Cases and Commentary, illustrative of the Somatic *Ætiology* of various Forms of Insanity, accompanied, when possible, in fatal cases, by reports of post-mortem examinations and microscopical preparations—their bearing on the symptoms being pointed out."

Cases not seen by the writer may be cited, but must be distinguished from those actually witnessed by himself.

The W. and S. TUKE PRIZE is open to all without restriction as to country, profession, &c., but the right is reserved to withhold it, should there be no essay of sufficient merit. Essays, to be written in English, and not in the author's handwriting, to be sent in a sealed envelope, bearing the motto of the essay, and containing the name of the writer, to the undersigned, not later than June 30th, 1876. The microscopical preparations, but not the essay, to belong to the Association.

W. RHYS WILLIAMS, M.D.,  
Hon. Sec.

Bethlem Royal Hospital, London.  
Dec., 1874.



# THE JOURNAL OF MENTAL SCIENCE.

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VOL. XXI.

## PART 1.—ORIGINAL ARTICLES.

*A Chapter on some Organic Laws of Personal and Ancestral Memory.* By T. LAYCOCK, M.D., &c., Physician in Ordinary to the Queen for Scotland, and Professor of the Practice of Physic and Clinical Medicine in the University of Edinburgh.\*

I propose to show that organic memory consists in cerebral processes, regulated by the laws of evolution and reversion, and common as vital processes to both plants and animals.

I.—The origin of acquired habits, instincts, and capabilities, and their transmission hereditarily as atavism are now too well known to need special illustration. What I now would affirm is, that the manifestation of these according to the laws of heredity is better understood if considered as a reversion to antecedent vital processes in parents, and to be classed with memory. On the other hand, that higher development of the brains which coincides with increase of knowledge, is a manifestation of the great law of evolution. But loss of memory, dependent on the defective brain-nutrition of old age, when evolution ceases, is not uncommonly associated with a return to the thoughts and habits of early life, being a reversion to that which the individual had inherited from his own childhood and youth, and so analogous to ancestral reversions, or heredity proper.

The problems to be solved may be considered from other points of view. Organic memory, as a whole, includes two distinct processes. The one consists in the brain-changes which follow upon an act of attention, and constitute the record of mental states; these are the result of physical impressions received by, and acting on the brain at the

\* This paper is the substance of a chapter written in 1872 for (as yet) an unpublished work.

moment of attention, which is the present. The second cannot occur unless the antecedent process—the record—has been completed, because it consists in a reversion to that process. Now, in the atavistic transmission of instinct and of other capabilities, whether in plants or animals, the end is attained by means of a microscopically small particles of living matter endowed with the property of evolution or development. In the formation of this particle there is both a record of ancestral qualities and a reversion to one or other of the primary forms of living matter. A simple analysis of the leading facts of organic memory serves to show that evolution of the primordial germ is analogous to evolution of brain and of mental power. In the two parental elements which, when integrated, constitute the primordial cell, there is a storing up, or record potentially, of the organic capabilities of each of the parents; so also there is a like storing up of capabilities in the molecular encephalic tissues. And just as the primordial cell is capable of evolution and development under fitting conditions, so are the latter. These apply equally to reversion, which is the correlative of evolution. In the formation of the primordial cell there is a reversion to one of the simplest and most elementary forms of life. What, therefore, is termed heredity is an evolutionary reversion potentially to antecedent modes of activity, manifested in parents and ancestors, as in like manner reminiscence is an evolutionary reversion to antecedent modes of activity manifested in the individual. Again; just as acquired ideas and notions dependent upon memory tend to evolve, concurrently with brain evolution, into more comprehensive notions so as to develop systems of thought; so, consequent on the contact with new external conditions, the evolving organism acquires and transmits new instincts and capabilities, and enters upon wider external relations. We may, therefore, assume as to these general laws, that the vital processes whereby all is attained that is included under cerebral development and mental activity are comparable with certain vital processes in the lowliest organisms.

That definite tissues of the brain and combinations of brain-cells and molecules subserve definite vital processes in memory and reminiscence is now an unquestioned fact. How the results of these processes become a part of the transmissible elements of the primordial cell, formed by the integration of the sperm-cell and the germ-cell, remains to be elucidated;

but the fact is certain, and can be made the basis of important generalizations. We can affirm, for example, that the record, which is the first step in memory and in cerebral evolution, is analogous to that process by which the genetic cells are endowed with the modes of manifestation of vital energy that are, or have been, ancestrally realised in time and space. And these words *time* and *space* imply fundamental elements in the mental processes included under memory, as knowledge; for the element, time, is essential to reminiscence, and the element, space, to perception and a knowledge of events as having happened in time past. Immediate reversion is the reminiscence of the last record or latest evolution.

It is to be noted, too, as to the ancestral endowments manifested in all organisms, whether they be plants or animals, and whether manifested as energies or functions or states of consciousness, that being potentially conserved in these microscopic particles of living matter, they can become new starting points of evolution. The process not only secures the conservation of the type or species (or the specific identity corresponding to personal identity), but also governs those departures from the type which result from the adaptations of organisms, whether plants or animals, to new external conditions, and which are the most facile in the lowliest and smallest organisms. Hence just as the processes of memory subserve to a knowledge of wider relations in the individual, so this process serves to the acquisition of wider relations in the species, in the form of new instincts and special hereditary adaptations to new conditions. If these wider relations be so extensive as to change the characteristics of the species in the progeny, then it is said that new species, or at least varieties of the species, are evolved.

According to these views I assign a much more important position to the encephalon in the nutrition and development of the body generally than is attributed to it by the great majority, if not all, of the school of cerebral physiologists. These, by restricting the functions of that organ to the operations of the mind, so called, meaning thereby all that comes under conscious states, are at a loss to understand why the convolutions vary so much in different animals with like degrees of mental activity, while, on the other hand, animals with a *minimum* of mental activity—as sheep—have convolutions as multiform and numerous as other animals with much higher endowments. The influence of

the mind on the body in popular phrase, which means scientifically the trophic reflex functions of the brains, is also a perplexing problem from the ordinary point of view, whereas the theory that the brains regulate the functions of viscera, the composition of the fluids, the nutrition of tissues, and the growth and development of parts, or of the whole body, enables the inquirer to have a clearer view of the facts. The disfiguring influence of blindness and of various forms of insanity is an illustration of the theory. The brains unify.

II.—The first element, then, in organic memory, according to the views just stated, is the record. So far as I know, this fundamental organic process has received no name. A general term, expressive of an abstract scientific conception, is essential to further research by means of that conception. A good illustration of this rule is afforded by the use of the words, analysis, synthesis, dialysis, and affinity in chemistry. It seemed to me, therefore, of importance to *name that organic process by which knowledge is conserved and retained, so that evolution of brain-tissue shall result with correlative reversion.* After consultation with classical friends, I adopted the old Greek work *synesis* (pronounced sinnesis) to denote the process; *synesy* to denote the result; and *synetic* as the adjective. When this organic process is morbidly defective there is *asynesia*; when it is abnormally intense there is *hypersynesia*. Both these conditions are very common; in the aged *asynesia* may coincide with a vigorous remembrance of long-distant events. Usually the term *amnesia* is used vaguely to denote defect of either record or of remembrance, but there may be a *hypermnesia*,\* manifested as abnormally vigorous reminiscence, with *asynesia*. So also in the insane there may be *hypersynesia* as the cause of permanently fixed ideas with defective reminiscence or amnesia. *Asynesia* is very common in epilepsy and other disorders affecting the basilar region of the brain; also in injuries to that region.† The union of the sperm-cell and germ-cell is *genetic synesis*.

It will help to understand the nature of this process if we bear in mind the primary meaning of the word *synesis*. As used by Homer it denotes the intimate union or integration

\* Feuchtersleben uses this term, but vaguely, and rather to denote record than reproduction.—See Medical Psychology: Trans. of Sydenham Society, p. 237.

† See for illustrative cases my paper "On certain Organic Disorders and Defects of Memory," "Edin. Med. Journal," April, 1874. See also an exposition of these ideas in "Mind and Brain," 2nd edition, vol. ii, p. 407, sqq.

of two rivers ; as used in philosophy it meant the bringing of outward objects into union with the inward sense, or, in modern phrase, the combination of the perception with thought. Hence Plato defined memory to be the union of the body and the soul in perception. *Synesis* thus came also to denote intelligence, understanding, the faculty of comprehension.

Physiologically, *synesis* may occur under varying states of consciousness ; and reversion, as reproduction may, and often, indeed, does take place without any consciousness whatever. That there shall be reminiscence of events (which is reproduction or reversion with knowledge either of time past or of place) that state of brain which coincides with perception is essential to *synesis*. In thinking, the senses may be recipiently, but not percipiently, active, and yet *synesis* or evolution as to outward impressions will go on. Those are the so-called unconscious influences of surrounding objects, of which the assumption of colours of such objects by insects and fishes is an illustration. When such *synesies* occur under moral influences, as those of example, or from so-called suggestion, imitation, and the like (all which are reflex cerebral phenomena of the trophic kind), and reproduction takes place, there is not necessarily reminiscence. In any case, however, it seems certain that for this kind of encephalic *synesis* a state of brain that implies consciousness of some kind is an essential condition.

III.—Before applying these views specially to memory, whether personal or ancestral, it will be useful to indicate their bearing generally on encephalic nutrition and evolution, on vital energies, on the origin of species and varieties, and on those points of variation in which men differ from each other, and every man from himself, in successive periods of life. The law of continuity (which I cannot stop here to define) is the guide to the elucidation of their connection with evolution and reversion. This law is to vital phenomena what the first law of motion is to physical phenomena. A series of synetic changes having once begun under certain conditions, they tend to continue unchanged until new conditions arise, when a new, or, at least, a varied, series of synetic changes begin to follow the same course, and in their turn to be varied only by new conditions. Thus, with each change in the conditions, we have to consider both the primary direction which evolution is taking and the se-

condary direction fixed synetically or by experience in adaptation to the new conditions. It is evident that the latter will be represented by what, in physics, is caused by a composition of forces. But two other fundamental facts are to be considered. Firstly, every organism is a unity made up of many parts, and its parts vary under new conditions in adaptation not only to external conditions, but to each other. Secondly, each evolution in a new direction, when completed by synesis, has its own stages of completion, reversion, and decline. Hence literally the infinite diversity in species and individuals.

It is in these varied relations to outwardness, succession, and continuity that vital energies differ from the molecular forces of ponderable matter. They cannot be estimated by so much horse-power or pound-lift per foot; nor is there any direct relation between the brute weight of living matter and its evolutionary capabilities. The sperm-cell of a mouse is, in fact, much larger than that of a man; and although size is of importance in estimating the general brain-power of like animals, it is of doubtful value as to the comparative capabilities of brain-matter, even in the same brain. Further: in studying the phenomena of evolution and reversion it is of importance to discriminate between the two chief factors of the processes. Firstly, there is the organic basis, or *substratum*, the result of synesis, either personal or ancestral; secondly the physical energy—as motion—by which the organic bases become energetic. These physical energies, commonly derived from external things and conditions, are called external impressions, but there are many which are purely internal. Such, for example, are the impressions reaching the brain, independently of consciousness, from viscera and organs of the body, and more especially those which reach it from the nerve-centres. To this latter class belong all those molecular changes in the hemispheres which correspond to so-called associations of ideas, motives, and the like, and which are reducible to molecular motions.

Synesis as evolution, and reminiscence and reproduction as reversion, depend alike upon the reaction between the motor energies termed impressions, and the molecular energies proper to each *substratum*. In what this *substratum* consists physically is a problem to be solved (if it can be solved) by the methods found available for the solution of similar problems as to inorganic matter. Of the molecular

constitution of brain-substance, or even of that of the simplest protist or protozoon, we know little. The chemical and physical hypotheses deduced from atomic theories are conflicting and vague; in truth, all atomic theories are but the results of thought regarding the continuous divisibility of matter. We can continuously divide matter actually up to a certain point, and thence can continue the division in thought *ad infinitum*. It is only the necessities of thought which stop this continuous divisibility and end the process with the indivisible, or atomic, particles. Hence the atoms of the philosopher rest on brain work. Even the mathematical demonstrations of their existence are nothing more than results of brain-evolution.

In adopting the term *substratum* to denote the organic basis on which physical energies act, whether that be in the simplest forms of living things or in the brain of man, I only follow a like logical necessity. The word *substance*, now used to indicate that which is opposed to mind and to what is spiritual, was formerly used in a like sense as to mental phenomena, as this word *substratum* can be used in regard to vital phenomena. Its primary use was to denote the spiritual basis of mind, and it is so used in the Athanasian Creed, where Christ is affirmed to be "God, of the substance of the Father." All we can do as to vital phenomena is to observe and generalize as to the reactions between the so-called impressions and the *substrata*. And it may be said generally that there is just the same law of relation between the tissues of the sensitive plant and the impression or the touches which make its leaflets contract, as there is between impressions on the senses and the brain-tissue. In short, there is a law of trophic reflex action running throughout all those phenomena up to the highest mental manifestations.

Forty years ago the phenomena of reflex action were restricted by Marshall Hall to the "true spinal system," and the brain was solemnly relegated to the dominion of "the scul." When, therefore, I extended the general deductions from admitted facts as to the spinal cord, and endeavoured to elucidate the functions of the brains by the law of reflex action, I was obliged to give a name to those conditions of the brain-tissue upon which, whether in thought or in action, adaptive reactions to adapted impressions depend, and designated them the *substrata* of psychical phenomena.\* I divided

\* Essay on Reflex Function of the Brain in Brit. and For. Med. Rev., Jan., 1845, p. 308.

them into two classes corresponding to the motor and sensory tracts of the spinal cord, naming those the *ideagenic* which, when acted on by sense-impressions led up to thought and ideation, and those the *kinetic* which subserved when acted on by other impressions and by ideation to motor and volitional activity.

The etiology of these substrata is obviously an all-important problem of modern philosophy. As to this, it will be seen on reference to my essay on the reflex function of the brain, that I formularised both evolution and reversion, and their manifestation in molecular organization then as now; affirmed the principles of adaptive relation; and gave various illustrations of evolution and reversion of habits and instincts both in mankind and in lower animals. Even the gasp of the hydrophobic patient at the touch, sight, sound, or thought of water, was referred to antecedent synesies under the name of substrata. I explained the gasp experienced when cold water is dashed on the body, and of which the hydrophobic gasp is a spasmodic exaggeration, by an ancestral substratum formed in an amphibious state of existence, in which closure of the glottis is one of the conditions of living under water, and would occur as a reflex act so soon as the animal's head and nostrils were submerged. I am not so clear now as to the validity of this explanation, but it is perhaps worthy of record. "Thus," I added, "the kinetic and ideagenous, or sensorial textures [tissues] of the ganglia of all animals are interwoven with those of the human organization."

Evolution of the brain, then, coincident with increase of knowledge and skill, means the constant addition of synesies and substrata either kinetic for skill or ideagenic for thought. This is personal memory. The capability of reproduction or re-evolution of transmitted substrata is ancestral memory. Taking these generalisations as a basis of inquiry, we can conclude that impressions of new external conditions acting upon the substrata of either personal or ancestral memory will give rise to new substrata, and thus infinite variations in corporeal characteristics and mental endowments will arise in adaptation to these new conditions, and so new species and varieties of species are constituted. In like manner new experiences and increased knowledge of the phenomena and laws of nature alter the human body and brain and mind in races and in individuals, but always with a tendency to revert to antecedent synesies or ancestral substrata, when the prior conditions arise and the new

external conditions cease to influence brain-function and development.

I would wish to guard this statement, however, from its being taken as admitting *in toto* the lineal hypothesis of Darwin. That seems to be admissible as to civilised races of mankind, in descent from savage tribes, but it is not so certain as to man's direct lineal descent from the great stem of organized life through anthropoid apes. If we assume that a point of reversion to ancestral substrata may become the starting-point of a new evolution, it is obviously possible theoretically for anthropoid apes to be the descendants of degenerate ape-like men. In this event such apes would carry with them some ancestral human potentialities and manifest human characteristics in some degree. Nor is the notion so very remote a deduction from facts as appears at first sight. When we remember that the prognathous physiognomy and other marks of degeneration towards savage men seen amongst our own countrymen are probably due to defective conditions as to food, clothing, housing, and surroundings like what may be termed uncivilized life, it is not surprising that prognathous tribes of men have reasoned in like manner as to the origin of apes from their degenerate kindred. If the theory of lineal descent be admitted (which, however, has yet to be established, there are so many residual phenomena) then it is obviously applicable in the direction referred to. Of this Professor Huxley quotes an instance as to the human origin of the chimpanzee. "It is a tradition with the natives generally here (Cape Palmas, Bight of Benin) that they (the chimpanzees) were once members of their own tribe; that for their depraved habits they were expelled from all human society, and that through an obstinate indulgence of their vile propensities, they have degenerated into their present state of organization."\*

I will now give illustrations of reversions to antecedent substrata or synesis under the two divisions of kinetic and ideagenic, being those which, when they are encephalic, subserve to ideation and to volitional activity respectively. Of the latter class are such habits or acts, as writing and speech; of the former the thoughts and feelings, of which gestures and spoken and written language are the signs. These represent in the individual, as well as in the race, the highest attained mental capabilities designated practice, skill, experience,

\* Dr. Savage in "Boston Journal of Natural History," Vol. iv., 1843-44, p. 343, quoted by Prof. Huxley, in "Man's Place in Nature," p. 45.

education. Concurrently with the production or reproduction of these are the feelings known as the pleasures and pains of memory.

IV.—Cerebral pathology of the individual affords the most direct and conclusive illustration of the organic laws of reversion, since the facts are more completely under our observation. They are of two classes, viz., those which are due to defective nutrition of the higher substrata of the hemispheres, so that the lower come thereby into activity, and those in which the lower substrata, by over-excitement of the circulation or of the nutrient activity of the corresponding brain-tissue, become over-active and dominate the less active and perhaps more feebly nourished higher substrata.

The defective nutrient activity of old age offers obvious illustrations. It is not uncommon to meet with aged persons in whom the brain has ceased to evolve, who have abnormally vivid reminiscences of the events of childhood, yet in whom synesis is so defective that they cannot remember what happens from day to day. Such cases have an important bearing on questions of legal capacity of the aged. The hypermnesia appears to be due to an "erethism" or abnormal excitement of the substrata of childhood and early life. And the old man is a *laudator temporis acti*, because the past with its pleasurable reminiscences is more with him than the present. For a like reason, a man sometimes returns at the very close of life to the feelings, pleasures, and hopes of his youth.

Cerebral defects characterised by gradual decay from above downwards, and the mental states which correspond to these, such as general paralysis, certain kinds of dementia, and more especially the senile dementia termed dotage, variously elucidate the laws of organic memory which I am endeavouring to formularize. The development of brain-tissue as to knowledge goes on concurrently with the evolution of that which subserves to the sign-making or semeiotic faculties of drawing, writing, speech, gestures, and mimicry. The capability of representing abstract ideas by the signs known generally as speech or language, enables man to evolve into that higher culture which other animals cannot attain, except in a limited degree as to those animals which are his companions and are taught the use of signs by him. Of course the semeiotic faculties, considered as due to kinetic substrata, include not only speech and writing, but also music, painting, sculpture and architecture. So that in these arts

the law of correlative evolution and reversion is manifested both in health and disease. I accordingly seek in the rude arts of children and demented for the analogues of those of uncultured men, and observe that in brain-diseases of men of high culture there is a reversion to the substrata of childhood, ancestors, and uncultured man. The arts of music and architecture, at least of lower animals, can also be brought into this category; and if, setting the doctrine of lineal descent aside, we take the philosophy of ideas as our guide, we can include the forms of plants.\*

As an illustration of reversion from the high culture of manhood to boyish art and hand-writing, with erethism of a kinetic art-substrata, I give examples of the hand-writing, drawing, and art-composition of an artist who died of general paralysis. (See figures 1, 2, 3, and 6.) The patient was under the care of my valued friend, Dr. W. A. F. Browne, who several years ago favoured me with the originals. The case is very specially interesting, as showing that in general paralysis (so-called) the motor substrata of the hand may be wholly unaffected by palsy; there is not even the tremor observed so commonly in that disease. The hands being thus free to execute, we have a transcript of the organic ideational changes going on in the hemispheres, as manifested by the correlative reflex motor impulses, even when the disease was advancing to utter incoherence. Figure 1 is a pen-and-ink sketch of a landscape made in December, 1855, at a time when the artist may be said to have been "in love," as certain letters show, with a lady named; whether the lady was an imaginary person or not, is not known. The sketch is picturesque, and of the "meet-me-by-moonlight" class as to sentiment. It illustrates the evolutionary influences which excitation of the nerve-centres subservient to the sexual instinct exercises over the brain-tissues or "organs" subservient to the higher art faculties and the higher sentiments. The physiology and pathology of this last class of cerebral phenomena (those of "falling in love") have been little considered scientifically; they have been rather thought to be eccentricities and follies than scientific phenomena. They are, however, developed according to general organic laws, which I have illustrated elsewhere.† They may be classed under the

\* I here refer to my doctrine of Ideas as Causes. "Mind and Brain," 2nd edit., Vol. i., p. 271 to end.

† "Mind and Brain," 2nd edition, Vol. i., p. 419, and Vol. ii., p. 123.

term *orectic imagination*, being derivatives of desire or appetite.

Figure 2, sketched later than figure 1, is a reversion to the rude comic ideas and execution of boyhood.

The hand-writing in this case illustrates the like law of reversion. Figure 3 shows the style and ideas in December, 1855; in figure 6, written a year later, there is a reversion in thought to birth and to the style of hand-writing of boyhood; whether at any time the patient wrote exactly in that style could not be ascertained.

The effects of sudden mental shock on the brain may be manifested by a like scriptorial reversion. A lady, well known to me, experienced, at the age of 20, a severe grief from the death of a clergyman to whom she was shortly to be married. He contracted fever and died within a week. The bride-elect suffered much mentally, and finally became, as she is now, a Protestant Sister of Charity. At this time her hand-writing changed from the usual current style of feminine writing (as her mother tells me) to one of straight strokes. An illustration of this is given (figure 4), and also the hand-writing of the same lady ten years subsequently (figure 5), when it will be seen there was a recovery to the continuous style of hand-writing.

Much has yet to be observed as to the influence of brain-states on the hand-writing; my own observations lead me definitely to the conclusion that it varies much in the same person with varying states of brain, and that changes in it may foreshadow brain-disease as distinctly as alterations in speech. In children bad writing is not always the result of idleness, as the schoolmaster ought to know.

Do ancestral styles of writing occur? That fact is not easily observed, because the son may be expected to imitate the father. There are, however, instances on record in which there was reversion to an ancestral style, independently of imitation. Viewed as a habit, the hereditary transmission may be expected to be manifested in ancestral reversion. The reversions to infantile modes of speech and to ancestral phonetic substrata, is not uncommon in cerebral diseases, and in defects of cerebral development. The reversion to an ancestral style of writing has its counterpart in the reversion to ancestral or racial pronunciations of letters and words, in those who lisp, and in certain so-called "cockney" modes of speech. Certain uncultured races, as the Hurons, are said to be unable to pronounce the labials. In certain cerebral

diseases with "aphasia," acquired languages are quite lost, and the language of childhood only spoken; or else foreign languages acquired in childhood or early youth are reproduced. It may be observed, too, that aphasiacs are sometimes unable to pronounce the labials.

A similar class of phenomena occurs in cases of cerebral palsies, in which whole classes of words are lost, and to which my friend Dr. Browne has called special attention. "Most frequently," he observes, "this loss is confined to nouns and proper names, while verbs and other parts of speech are preserved; and where aphasia is progressive, the [noun] substantives which we acquire first disappear first, and the other vocables follow. . . . It must be observed that in the dialects of certain nations one word not only represents a vast number of objects but that whole groups of words familiar to us are not to be met with. In North America the Tinné Indians have no word for 'dear' or 'beloved,' and the Algouquin language is stated to have contained no verb meaning 'to love,' " &c.\* Dr. Brown lucidly observes that it must not be concluded that these races have not the ideas and feelings for which their language affords no signs, but rather that there is poverty and feebleness of that power by which signs are invented and applied. In short, from my point of view, there is defective brain-evolution, and therefore with less abstraction and differentiation. So that, in the kinds of defective memory of words referred to, the brain condition is that of reversion to earlier or ancestral phonetic substrata. The same law may be observed in the education of deaf-mutes, who, as to the acquisition of language, offer the brain-condition of infants. The experience of M. Etard supplies illustrative facts.

There are, moreover, cases in which the whole of the sign synesies as to a language are swept away by some acute or sub-acute disorder, in which the nutrition of the hemispheres is affected in a particular way. Dr. Browne relates the case of a young married lady which came under his own observation, who, "on recovery from the dementia and stupor succeeding what would now be designated hysterical paralysis, was found to have retained no knowledge whatever of any of the events or acquisitions, including languages, writing, music, &c., of her previous life, [nor] even of her marriage. She [again] learnt the alphabet, and the language so long used

\* On Impairment of Language the result of Cerebral Disease, West Riding Hospital Reports, Vol. ii., 1872.

by her, writing, knitting, &c., as [if she were] a child, but with much greater rapidity and facility than a child could have done, and never regained the same command of the vernacular as she formerly displayed. Her caligraphy, as well as her disposition differed widely from those characteristics of her original condition; and she never resumed nor even recognised the ties and engagements contracted in that state." (*Op. cit.*, p. 12.) It would have added to the interest of this interesting case of Letheal amnesia if the mental state which the defect in cerebral nutrition developed was like that of any ancestor. The facility of regaining language she manifested may be held to be analogous to the facility which the descendants of those speaking a particular language are said to manifest in acquiring that language.

From these and numerous like facts, it may be deduced as to language that the organic process which I have named synesis takes place in particular portions of the tissue of the hemispheres according to an order in time; that the reproduction of the results of this process (the synesies and substrata) take place in the same portions; that the intensity of the process and the extent of reversion in time past depend upon the nutrient and evolutionary energies of the brain-tissues involved; and that both processes are manifested according to laws of evolution and reversion.

V.—Sleep and dreaming are states of brain closely allied to morbid conditions. The state of dreaming essentially consists, as to its fundamental elements, in abnormal reminiscences and reproductions when at the same time there is either imperfect perception or no perception whatever of the external world (*ante* p. 159). The delusions of the insane are to be classed with dream-delusions, both as to natural history and seat. It is probable that a fixed delusive idea is often nothing else than the synesy of a dream. In cerebral conditions induced by mesmerism or other "isms" of the class, and in somnambulism there are analogous synesies and reminiscences. And in those states associated with palsies and brain-fevers, when reminiscence of a long-forgotten language and events occur there is a like dynamic condition. With these may be mentioned the memories of old age.

The origin of fixed and insane ideas during sleep is too important a fact in mental pathology not to have special notice. It will therefore be discussed in another chapter. Here I would only endeavour to show—1. That the synesies of habitual actions may occur during sleep. 2. That

reproduction may recur only during sleep. And 3. That substrata may be transmitted to offspring to be reproduced in them only during sleep. An example of this class of memories is to be found in a history communicated by Mr. Galton to Mr. Darwin as proving the "inheritance of habitual gestures." A gentleman was observed by his wife to strike his nose when he lay fast asleep on his back in bed, by raising his right arm slowly in front of his face and then dropping it, so that the wrist fell heavily on the bridge of his nose. The act did not occur every night, but occasionally only, and never except during sound sleep. Sometimes it was repeated incessantly for an hour or more, and the bridge of the nose, which was prominent, often became sore. Many years after his death his son married, and the wife found that he practised with his right hand the same action as his father. It does not occur in him when he is half-asleep, as for example when dozing in his chair, but the moment he is fast asleep it is apt to begin. It is also intermittent in him as it was in his father, sometimes ceasing for many nights, and sometimes almost incessant during a part of every night. A granddaughter of the first, and a daughter of the second instance, of tender age, a "girl" and "child" performs the same action under the same conditions, with this difference, that the palm of the half-closed hand falls over and down the nose, striking it rather rapidly, and not the wrist.\* In this case it is probable the order of events was thus:—During waking the grandfather or his parent practised the act of stroking the chin or face; this was reproduced as a reflex act during a sleep in which there was more synetic impressibility than usual, and so the synesis was intensified. Then, when the same condition recurred, being in some degree morbid, the acts would recur. Hence as the quasi-morbid brain-state intermitted, the action in sleep would intermit, and as the concurrence of the brain-state of sound sleep was necessary to the morbid activity, the acts would not recur during the half-waking condition.

Like phenomena occur in analogous morbid states of consciousness. I attended a glass-blower with typhus, who was delirious and who could not be got to drink, because the moment the cup or glass touched his lips he began to blow from peripheral reflex action. An analogous case of centric reflex action has been published by Dr. Hughlings Jackson. A

\* The Expression of the Emotions in Man and Animals, by Charles Darwin, M.A., &c., &c., p. 33, note.

man deeply comatose from hæmorrhage frequently raised his left arm and with his hand would curl or twist his moustache with remarkable "grace and regularity." On inquiry this was found to have been a confirmed habit when in health; he was a militia sergeant.\* Here the substrata were left untouched by the cause of the coma.

These considerations point out the need of discriminating the conditions under which synetic reversion occurs. In ordinary recollection there must be the association of ideas, so-called, which is in fact the state of consciousness which corresponds to the successional reproduction of associated synesies, and these must be induced by the impact of some external or internal affinitive impression. To this end it is necessary that the ganglia which are the recipients of impressions, be more or less capable of functional activity. Now, in sound sleep the senses are closed, and no impressions are active, while in half-sleep they are so far closed that the perception of external things, the sources of external impressions, is not induced, and therewith dreaming results. But internal impressions, which are equally causes of activity of brain-tissue, are freely received from the viscera, from the blood, and from things contained in the blood, and thus automatic cerebral activity is induced, when external impressions are shut out, with the motor and ideational results which characterise ordinary dreaming, but without production of reminiscent synesies. Hence it is that dreams are not remembered unless immediately reproduced on waking, and thought over during the full-waking state.

There still remains, however, the inquiry why dreaming is so completely a state of delusions and hallucinations closely resembling those of the insane and the delirious. The laws of evolution and reversion may help to an understanding. In true sleep there is cessation of evolution, or else cessation of cerebral activity in the more highly, which means the last evolved, substrata, unless the sleep be in the morning after waking from the true sleep, when the higher substrata are often the more active. In proportion as the higher substrata are inactive the lower and antecedent will be energetic if they be kept awake and active by any impressions reaching from either without or within, and the sleeper dreams accordingly. But at this time, the senses being inactive, there is no perception of time or place, or fitness, such as

\* "Med. Times and Gazette," May 15, 1875.

belongs to the higher substrata. Consequently when earlier long past substrata are reproduced, or associations of recent substrata are thrown into new forms or imaginations, the absence of perception renders comparison impossible, and so there is no reminiscence, and no teaching that the whole series of thoughts, images, and the like, are phantasmal.

Hence the hallucinations and delusions of the mesmerised, the dreamer, and the insane have a common origin in a defective comparison of what now is with what is organically anticipated as an imagination or a foreboding, or reproduced as a reversion. The same law applies to perceptions of lapse of time, and of extent of space as to events and forms of things, and to the "me" and the "not me," or personal identity.

We can also say conclusively that if the brain be intensely active with some present thoughts, there will be little or no synesis as to present external things or associated reversion to past substrata, and thus a defect of memory, such as attends on dreams, will occur during waking-thought. On the other hand, if at any time during waking from any conditions of brain-tissue external conditions are less intensely active, as in sleep, there may or will be a going back or reversion to a lower and earlier range of substrata developed under other and different external conditions. We may, therefore, reasonably conclude that when men or animals manifest impulses of an unaccountable character, and experience pleasures, and sympathies, and pains, and antipathies which seem to be out of relation to their culture and personal experience, or to the culture of the family or the race, whether in dreams or when waking, the source of these must be found in long-past or ancestral memories reproduced according to the law of reversion; but being out of relation to the external conditions of the individual, and not, therefore, developed by reflex action due to external impressions, they are not revived as knowledge.

VI.—The pleasures and pains of memory have often been discussed. Painful synesies are apt to become very permanent, and may be continued in the individual for a life-long period, as likes and dislikes, as well as bodily griefs and joys. They may be transmitted also as substrata from remote ancestors. Time (during which evolution takes place) is the great healer of griefs, and however closely the grief may be hugged it finally vanishes beneath later synesies.

“ Lo, for a little while a burning pain ;  
 Then yearning unfulfilled a little space ;  
 Then tender memories of a well-loved face  
 In quiet hours ; and then—forgetfulness.”\*

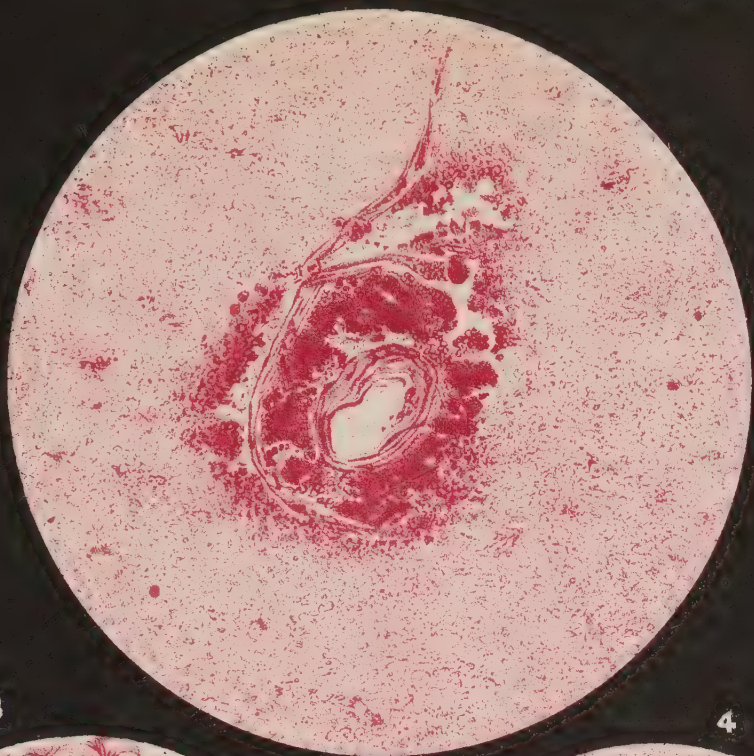
It would seem as if with evolution of brain, when succeeding events are added to organic memory with pleasure or with pain, the dynamic changes occur normally in the latest evolved synesies, and so the past with its feelings has to yield to each succeeding present as in its turn it becomes the past. Should, however, any morbid or *quasi* morbid condition (such as sleep) sweep over the more recent substrata then the distant in time will re-appear, and reminiscences of the past be produced, with their hopes, and fears, and feelings.

Pleasurable and painful reminiscences will be manifested according as the state of brain is vigorous or not. Pain and grief mean defective energy, and therewith not unfrequently the bodily health is affected. Painful reminiscences are apt to occur in that state of cerebral health known as “low spirits,” “depression,” and the like, and which is induced by numerous bodily disorders, as by over-fatigue of brain or of body, by defective food-supply, want of sleep, even by too deep sleep, and exposure to a high atmospheric temperature ; in short, by any conditions which depress the vital power in general, and that of the brain in particular. The case of Miss B., quoted in the Report of the Royal Edinburgh Asylum for 1871, is an example of this recurrence in insanity. She became insane for the first time about the age of twenty, and her insanity was then attributed to the mental agitation induced by a disappointment in her affections. From this attack she quite recovered, and remained well for nearly thirty years, at the end of which period she again experienced much bodily fatigue and mental anxiety on account of certain business reverses. She again became insane under these circumstances, and while insane reverted to her former early grief, bewailing the disappointment she then experienced. In this instance the patient died, her strength being worn out by the supervention of bronchitis on a constitution exhausted by mental and nervous disorders.

But there is a form of reminiscence which is not due to strictly pathological conditions, because it occurs in what may be termed a physiological or natural order.

In this class of cases there are usually definite reminiscences as to ideas, feelings, and events ; but there may be

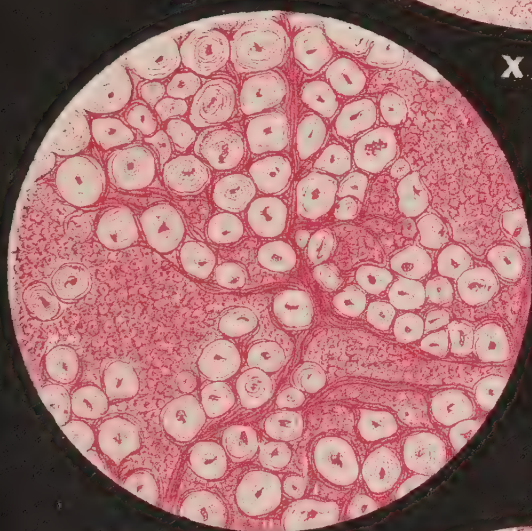
\* William Morris, in “Bellerophon at Argos.”



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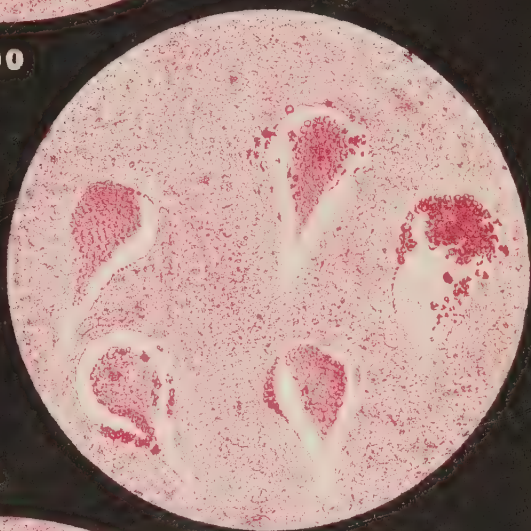
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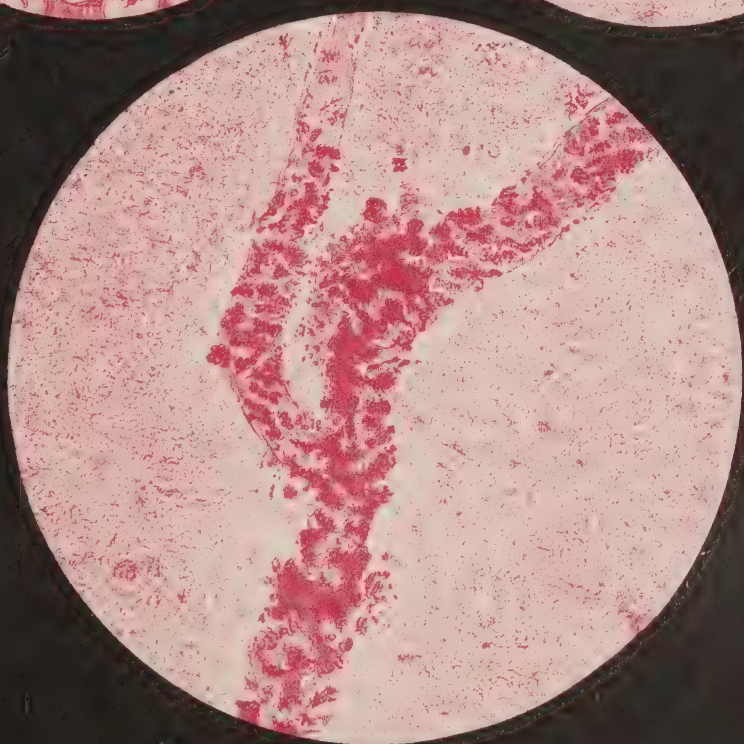
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reproduction of synesies without perception of the associated events, that is to say, without reminiscences, but with pleasurable or painful feelings. Abundant illustrations might be given of this kind of reminiscence from all departments of mental life and culture. Such, for example, are those returns to the faith of childhood shown in later years, and when dying by persons who, in the prime of intellect, have changed their beliefs. Such, also, are the proverbial returns to the first love or the pursuits of youth shown by many. As to purely intellectual work, it is very well known to authors. An author intimately known to me had, in his younger days, worked out a subject, written fully upon it, and published his views in an unsigned article of a quarterly review. In after years, when he re-perused his writings, he had no recollection whatever that they were his own. All that he experienced in the re-perusal was a feeling of gratification, and often of approval of the excellence of the composition, the justness of the arguments, and the clearness of the ideas. He was, in truth, the heir of his own synesies, and was thus constituted the unconsciously prejudiced judge of his own works. In his old age Linnæus took pleasure in reading his own works, but, forgetting that he was the author, frequently exclaimed, when so engaged, "How interesting! How beautiful! I wish I had written that!" One evening a lady on a visit at Abbotsford sung a song, which pleased Sir W. Scott very much, and when she had finished he went to her to express his delight with the words, and to ask the name of the writer. It was one of his own songs from "The Pirate." The memory of Walter Savage Landor was peculiar in this respect. He sold a fine family estate to buy that of Llanthony, in South Wales. Some years afterwards, while looking at a very beautiful spot on the banks of the Trent called Carwardine Spring, he exclaimed to a friend at his side, "Why the deuce did not I buy this place, and build my house here instead of that confounded Llanthony?" "Rather," said his friend, "why did you *sell* this place, which had been in your family for centuries?"\* Here the process is the same as in the preceding: there was a pleasurable reminiscence, but simply as approval and not with reminiscence as to the knowledge of "mine" antecedently. There are, however, failures of memory as to both the mine and the not mine. Landor often denied that he was the author of what he had written,

\* "A Book of Memories of Great Men and Women." By S. C. Hall, F.S.A., vol. x., 1871, p. 212.

but, on the other hand, he was in danger of appropriating the writings of others as his own. He was wholly unconscious that he had ever read his brother Robert's three tragedies published in 1824; yet in his "Andrea of Hungary" he has manifestly reproduced events, scenes, and characters of his brother's as his own invention.\*

A living man of science seems to have this infirmity, and charges of plagiarism are undoubtedly incurred from time to time because of this combination of defective reminiscence of *tuum*, and intense synesis as to *meum*. There is "unconscious cerebration" in the form of unconscious assimilation. Nor is it peculiar to poets, authors, and scientific inquirers. Doctrines and facts in politics, at first stoutly questioned and repudiated, then hesitatingly admitted, are finally appropriated and declared to have been well known and approved before. An officer in conversation with President Johnson told him that it was industriously circulated in the Democratic clubs that he was going over to them. He laughingly replied, "Major, have you never known a man who for many years had differed from your views because you were in advance of him, claim them as his own when he came up to your standpoint?" The officer remarked, "I have often." Johnson said, "So have I."

These facts and generalisations necessarily raise the great question as to the organic conditions upon which pleasure and pain depend; and more especially as to the relations of these conditions to memory, whether as synesis or reproduction. A few words may help to elucidate the question. There are two classes of organic conditions considered as substrata and synesies. Upon the one associations of ideas depend; on the other, associations of muscular acts or habits. Now it is found that if we restrain the manifestation of the latter, or introduce into them disorder, we cause the state of consciousness termed painful, although there is no *perceived* feeling of pleasure at the time of performance. On the contrary, there may be no consciousness whatever, yet restraint will still cause a painful feeling. Hence we may conclude that the frequent recall (or repetition) of encephalic synesies will, even if they were originally rather painful than pleasurable, be accompanied by a pleasurable feeling, although there be no reminiscence or knowledge. It must always be remembered, however, that the recall or repetition never occurs spontaneously, that is to say, volitionally; it is always automatic

\* See "Landor's Biography." By J. Forster, vol. ii., p. 365.

and reflex, and needs therefore the impulse of affinitive impressions.

It seems probable, however, that synesies associated with foresight and with feelings of pain in regard to self and anticipation of injury, do not become pleasurable habitual, how often soever they may be repeated. This is seen in the acquired instincts for self-preservation. All that may be said to result is comprised in the proverb "familiarity breeds contempt." This kind of synesis and of recall often occurs in individuals as vague presentiments of evil, but with no reminiscence of the events or trains of thought by which the anticipation of evil was reached. Sometimes it is an unaccountable feeling of antipathy. There have been thoughts as to the future founded on facts and circumstances, but there has been no sufficient synesis as to these, and so there is no reminiscence. Not unfrequently, however, if attention be directed energetically to the recall, then these latter may at last be remembered. That such states of consciousness may be due to ancestral reversion is shown by various facts. Many years ago I learnt from keepers in Wombwell's menagerie that the straw used for bedding the lions and tigers could not be used for horses, because the odour terrified them when introduced into the stables. Many generations of domestic ancestry must have succeeded each other since the wild horse, from which we may suppose the domestic animal to have descended, was exposed to the attacks of these felines. The descendants of an eminent philosopher lately deceased are known to inherit a causeless foreboding of this class. "A strange fear of drowning had pervaded Dr. [Sir D.] Brewster's life. He always believed that he himself was to perish in that way, a fear which strangely enough was discovered to haunt the minds of more than one of his descendants, even when too youthful to be prepossessed by any knowledge of others having felt the same."\*

No explanation is given of the foreboding felt by Sir David himself, but it was probably due to a synesis of a dream, either of drowning or of an anticipated danger to life from water. That such forebodings and numerous delusions and hallucinations of the insane arise in this way is, I think, certain. In many individuals the reminiscent reversion to waking synesies occurs only during special conditions of brain-tissue, such as characterise sleep and

\* "The Home Life of Sir David Brewster, by his Daughter (Mrs. Gordon)." 1869, p. 137.

dreaming, somnambulism, mesmerism, and insanity. Hawthorne relates an instance of foreboding giving rise to "instinctive" caution during dreaming. "A person while awake and in the business of life was accustomed to think highly of another, and placed perfect confidence in him, but to be troubled with dreams in which this seeming friend appears to act the part of a most deadly enemy. Finally, it is discovered that the dream-character is the true one. The explanation would be the soul's instinctive perception."\* The physiological explanation is that the dreamer either thought out the problems during sleep, or else during waking, without reminiscence of having thought. To the same class may be referred another story Hawthorne relates of instinctive antipathy (vol. ii, p. 67).

It seems more than probable that certain vague pleasurable and painful states may be due to ancestral reversion, although definite perceptions and notions may not. Thus the sight of any particular object or class of objects may be pleasurable or painful, because they were so to ancestors. Hence mountains and hills may be pleasing to descendants of highland ancestry, and plains and broad rivers to the descendants of tribes that have long roamed over broad plains, or dwelt by broad rivers. It is not necessary that such external conditions should be absolutely beautiful or pleasurable. There is a law of habit in feelings as well as in actions, so that impressions habitually felt by the individual become at last pleasurable; even although they may not have been such primarily, nor are such in their nature. Many illustrations of this law might be adduced. I subjoin one as to ancestral reversions. "Now we began to feel that we were really in Lapland, for ahead of us on the other margin of the lake lay tall hills, the boundary, as it were, of the fjells; you have but to ascend them to come to the great tract of country covered almost entirely with perpetual snow, on which the Lapps rejoice to be, and on which alone, surrounded by desolation and snow, they are happy.†

Similar statements in support of ancestral reminiscences are to be met with in books. Thus Captain Hutchinson, R.A., remarks in his "Try Cracow and the Carpathians" that "the Hungarian differs equally from German and Slav. Like his Asiatic ancestor, the Hun, he hates the mountains, and will live only on the plains where there is plenty of room for

\* Passages from the American Note Book of Nath. Hawthorne, vol. i, p. 268.

† Up in the North, by Thomas Shairp, 1872, p. 116.

him to gallop about on his horse" (p. 173). Again, "As a rule, Hungarians never go up mountains; they hate them. Immense plains are their admiration. . . . The general opinion [of Hungarians] was that England must be very ugly on account of the land being cut up by gentlemen's parks, fields, &c. (p. 189). In this way many prejudices, antipathies and æsthetic sentiments are due to ancestral substrata.

A fact drawn from the influences of the external conditions of a great city on an individual may contrast usefully with this. It is to be found on p. 243 of Mr. Shairp's book. "My friend (in Switzerland) himself lost in admiration of some grand prospect, the only disturbing influence being the murmur of a distant force, was recalled to a recollection of his 'native heath' by the following dialogue:—*First Cockney*, 'I say, Bill!' *Second Cockney*, 'Well, Arry?' *First Cockney*, 'Don't that noise remind you of a 'bus rolling down Cheapside?' Doubtless, the reminiscence was as pleasant to the speaker, as that of snowy fields would be to the Lapp, and of his native hills and heather to the relater."

Numerous illustrations of this law of correlative evolution and reversion might be adduced. Some ancestral synesies recur only in infancy or youth, that is to say, previously to complete evolution of brain. Mr. Darwin, discussing the habit of shrugging the shoulders, so much more common with continental people than the British, mentions the case of a little girl communicated to him by a medical professor and excellent observer, who was observed to shrug her shoulders at the age of between sixteen and eighteen months, her mother exclaiming at the time "Look at the little French girl shrugging her shoulders." The habit gradually ceased, so that when a little over four years old she was never seen to shrug. She practised also a similar action when she impatiently wanted something, viz., she holds out her hand, and rapidly rubs the thumb against the index and middle fingers; now her paternal grandfather frequently performed the same act under the same circumstances, and being a Parisian the shrugging was attributed, and correctly, to her descent from him. Her maternal ancestors were all of British nationality.\*

In this history another law is indicated, viz., that of reversion to synesies under emotional states. I knew intimately a very highly intellectual man, who in childhood and youth spoke vernacular broad Scotch, but who, by

\* Darwin, op. cit., p. 265.

diligent culture, had overcome the habit. When, however, he was *emotionally* argumentative, he invariably expressed his dissent by an emphatic "Na! Na!" instead of his usual "No!" This kind of emotional reversion is very common in those cases of cerebral disease, in which the semeiotic or sign-forming tissues are involved, and speech is affected, lately named *aphasia*. A very striking example of general reversion under emotional states is seen in danger of death from drowning, or under other conditions, in which death and the future life to follow are immediately anticipated. The emotionally anticipated future is said to be connected with a reversion to the whole past life.

VII.—It is, however, in those forms of hereditary tendency to defective nutrition of the higher convolutions with, at the same time, an insane and inexplicable reversion to lower and animal substrata that the law of correlative evolution and reversion is most strikingly illustrated. Evolutional mental energy is only normally possible with correlative nutritional energy, and this last may be, and often is, exhausted by excessive culture of the higher sentiments, feelings, and faculties. Such an imperfect nutritional energy is sometimes transmitted to offspring, and then the son of a genius is little better than an imbecile. This evolutional defect is common to all kinds of defective nutrient energy of organs and tissues. Thus Mr. Darwin mentions the fact that the progeny of two top-knotted canaries are generally developed with heads quite bare of feathers. Again, if that part of the brain subservient to the animal and lower appetites and passions be well-nourished, while the portion subservient to the moral sentiments be defective in nutritional energy if developed, or else imperfectly developed, then there will be a predominant manifestation of the lower instincts. Hence, not only are genius and goodness not hereditary, except under fitting conditions of brain-work of parents, but if both parents have put too great strain by culture on the nutrition of any portion of the convolutions subservient to higher mental evolution there may be a want of that culture in their children. It thus happens that the union of persons of high religious culture by ancestral descent, and the intermarriage of religious families so strangely end in the production of children totally devoid of moral sense and religious sentiment—moral imbeciles in short. What, however, is only a temporary defective state of nutrition in the parent may be a hereditary tendency to

defective nutrition in the offspring. So that high culture of the brain, of the nerves, and even of the body, tends, when carried beyond a certain point, to defective evolutionary energy and to correlative degeneration, or reversion to an ancestrally lower, or prior type. That this is a cause of insanity in many cases of the hereditary class is amongst the most certain facts of etiology. The lower or animal instincts and appetites are reversionally active, and are unrestrained, because the higher sentiments are evolutionally defective.

The facts of immoral dreaming are confirmatory of this view. Few persons who dream are ignorant of the fact that acts are done in dreams of the most grossly immoral character, without reproof of conscience, or a perception of their immorality during the dream. These come on awaking, so that I have been consulted more than once by persons of a highly religious turn of mind, because of these, to them, hideously immoral dreams. But the cause is not far to seek. During sleep the substrata of the higher sentiments are inactive in the dream; hence no corresponding association of ideas can arise organically to inhibit the immoralities due to the excitation of the lower instincts. In these dreams the state is temporary; in the morally imbecile it is permanent.

The reversions thus due to defective evolution and nutrition may be traced beyond immediate ancestors to substrata of the race acquired during savage life in long-distant ages; when the conduct is that of uncivilized man. Or if it be assumed that the origin of the early races of man is from lower animals (vertebrates) through anthropoid apes, then the degenerate men may be said to manifest simply brute habits and instincts. That there are idiots and imbeciles of this kind is certain, so that I formerly distinguished them by the term *theroid*— $\theta\eta\rho$ , a brute animal, the root of the German *thier*, and of our *deer*.\*

These theroid idiots are most illustrative when there is a reversion to brute-like characteristics of form, as well as of mind. There are, however, theroid imbeciles, who offer no signs of reversion morphologically. In like manner, there are cases of insanity in which the dominant aberrations are theroid. These occur chiefly in persons predisposed hereditarily to defective cerebral nutrition, and in whom a moral shock has been the exciting cause. This class of degenerations are characterised by insane impulses, or tendencies to abandon

\* See this question discussed in my lecture "On the Naming and Classification of Mental Diseases and Defects," "Journal of Mental Science," July, 1863.

society and to seek society of the lowest grade; to wander in woods and wild places (wandering melancholia); to live as hermits in caves, unwashed and unkempt; to follow savage impulses, as cannibalism and sanguinary mania; to imitate ferocious instincts, as lycanthropia, vampyrism, and the practices of men like the Agharee caste of Hindoos, who are said to go naked, eat filth, and pick the flesh from a human skull.

This class of reversions bears closely upon a social problem of great difficulty and importance, viz., that of the dangerous classes of great cities. That many, if not the majority of these criminals are moral imbeciles is certain, but besides these there is a mass of degenerate beings in civilized communities, who, without being criminal *ex confesso*, are savages in all but speech, dress, and name. In these similar causes are at work, as in individuals, so as to arrest on the one hand the higher evolution, and on the other develop reversion, but they are, perhaps, more physical—drunkenness and starvation being more common as causes, combined with the absence of stimuli to activity of the higher sentiments.

The permanence of the substrata of savage life is well illustrated by the ready return to savage life of men who have been educated from infancy in all the habits and requirements of civilization. I formerly gave an illustration of this in the case of an educated Indian missionary when witnessing an Indian war dance.\* The like has been experienced in cases of educated Africans and Australians. M. Huc† remarks that the Lamas or Buddhist monks drawn from the Tartar Mongols, whenever set free from the constraint and confinement of the Lamanesque life revelled in the independent life of nomads in their tents. So strongly were the nomadic impulses excited in many of these Tartar monks, that even fixity of tent was insupportable, and they would take it down, and set it up again many times in a day. In these examples we have an illustration of the frolicsome vivacity of healthy young persons when, away from civil life and work, they come into contact and converse with nature. It is the incidence of nature's external conditions, which revives the ancestral relations to nature. In this respect—*i.e.*, as to the presence of excitants of the reflex acts, the cases differ from those in which the desire arises internally for the performance of the acts or impulses. It is to the latter that the rule

\* See appendix to my Essay on the Reflex Function of the Brain for this and other illustrations.

† Travels in Tartary, Thibet, &c., vol. ii, p. 88.

of culture applies more especially—culture standing for higher development.

VIII.—As to all the preceding phenomena we can observe, record, compare, and deduce from facts within the reach of observation. The laws which determine the evolution and culture of a plant and its reversion to its wild or uncultivated state, apply to the lower animals and to mankind. It is clear, too, that certain states of feeling, as of pleasure and pain, antipathies and sympathies, prejudices and prepossessions, occur in consequence of the reproduction of ancestral substrata, but without that knowledge of pre-existence upon which reminiscence depends. The question arises, however, whether there can be reproduction with such a feeling of ancestral personal existence as will give rise to the notion of a *continued* pre-existence, or, in other words, that notion which constitutes personal identity or “the ego.”

In seeking for, and classifying suitable facts, it is necessary to bear in mind that the brain-tissue involved is that upon which not only consciousness, as the ego of the metaphysician, but all true thought depends. Such thought deals with generalisations, which are abstract ideas, and *quâ* the individual thinker have no existence except in his consciousness. Time and space, and matter and force may exist as apart from the thinker, but to him as ideas they can only exist as *he* thinks by his brain. Consequently, it is evolution of the hemispheres, in regard to abstract ideas of time past and time future, of person, number, events, and causes, that we have to consider if we would solve the problem of reversion to ancestral modes of thought. The facts have, therefore, to be sought—not in definite ideas, but in obscure feelings and intuitions as to some distant existence mentally in the past, which can serve to the evolution of ideas, and of philosophical systems as to the origin and existence of the individual and his surroundings in the past. Dr. J. D. Morell has illustrated how this may happen in his chapter on “Preconscious Mental Activity,”\* in which he considers facts and doctrines like those stated *ante* as proving preconscious mental activities, and concludes that they are due to an “unconscious soul,” which comes into existence as a “distinct individuality” at the moment of conception (p. 53). There is no reason *à priori* against the conclusion that definite notions derived from

\* “An Introduction to Mental Philosophy on the Inductive Method,” 1862, p. 46.

ancestral substrata may arise; the recurrence of habitual acts, and of forebodings like that of Sir D. Brewster, are not less improbable. The difficulty is to prove the recurrence as a fact by tracing their origin back to ancestors.

The occurrence of vague notions of a past mental existence is very common, and the majority have probably their origin in dreams or in forgotten thoughts, but not being traceable to the present life they are referred to some state of mental life passed through by "the soul" before birth. This, indeed, is so common a conclusion, and has been so often thought out, that numerous and widespread systems of religion and philosophy, and especially the doctrine of the pre-existence of the human soul, has been evolved in all ages. It is still current in India, where it pervades the popular belief, and it obviously gave rise to the question put to Christ when he was asked, "Master, who did sin, this man or his parents, that he was born blind?" For the man could only have sinned in a previous state of existence. Mr. Dallas, who adopts the doctrine, observes\* that he who in modern times has most emphatically expressed this idea is Wordsworth, who not only held to the pre-existence of the human soul, but to its origin from God. He remarks in the finest of his poems—

The soul that rises with us, our life's star,  
Hath had elsewhere its setting, And cometh from afar,  
Not in entire forgetfulness, And not in utter nakedness,  
But trailing clouds of glory do we come  
From God, who is our home.

In thinking out these various problems man seems to have concluded, at a very early period of philosophy, that a continuous future life must necessarily be connected naturally and not supernaturally with past terrestrial life. Two systems of religious philosophy arose out of this fundamental principle, which (it is plain) is soundly logical; one which, taking into consideration the obvious similarities between mankind and brute-kind, reincarnated the departing souls in the bodies of animals, thus establishing the hypothesis of transmigration; whereas, the other, restricting the re-incarnation to mankind exclusively, adopted the hypothesis that the soul at death passed into the bodies of infants. The former dogma implied that animals are endowed with souls. I have referred to that doctrine elsewhere.† It was by the converse of this doctrine, viz., that animals had not souls—a soul being held to be the exclusive endowment of man—that Descartes

\* The "Gay Science," vol. i., p. 220.

† Mind and Brain, vol. i. p. 68.

explained the automatic action of the brain. What Dr. Carpenter attributes to a "self-determining power," named the will, Descartes attributed to "the soul."

It is a fact of singular psychological interest that there is at the present time in France a reversion to the ancient doctrines of metempsychosis, and of the evolution and transmigration of souls. They are propagated by a school of theologians sufficiently important to be denounced in 1857 to the Papal chair by a council of French prelates; previously to which date a priest named Jean Reynaud, in a work entitled "*Terre et Ciel*," eloquently developed a system of religious philosophy, which is avowedly a reproduction of Druidical metaphysics. Like others who have speculated on these questions, and whose knowledge is more astronomical or cosmological than biological, he mingles his speculations with the hypothesis of a plurality of inhabited worlds. Camille Flammarion is, perhaps, the most popular writer of this astral or universe-school. His treatise, "*La Pluralité des Mondes habités*," is now (1872) in its seventeenth edition, and his "*Les Mondes Imaginaires et les Mondes réels*" is in its tenth edition. The most concise, learned, and readable book on the whole subject is that of a French advocate of Lyons, named André Pezzani, entitled "*La Pluralité des Existences de l'Ame, conforme à la doctrine de la Pluralité des Mondes; Opinions des Philosophes anciens et modernes, sacres et profanes, depuis les Origines de la Philosophie jusqu'à nos Jours*." Fifth Ed. 1872.

When the facts of biology more predominantly occupy the thoughts of the speculator, the law of vital continuity evolves and the doctrine is developed that a future life is of necessity continuous with terrestrial life. Monads, germs, and other things capable of evolution are the continuing means of one class of biological pre-existences. St. Paul, an eminent philosopher of his day, explains the resurrection as the continuance of terrestrial life through a germ, out of which the new body will evolve. Amongst modern philosophers of this school may be named Charles Bonnet, one of the most penetrating and sagacious intellects of his age, who promulgated a modified biological doctrine of Palingenesis.\* According to the ancient doctrine, if the ashes of a plant or an animal be treated according to certain rules, there will be seen in the smoke its soul, produced as the colour and form of the

\* "*La Palingenesie philosophique : ou, Idées sur l'Etat passé et sur l'Etat futur des Etres vivans*." 2 Tom., 8vo. 1769.

plant or the animal. Again, if the ashes of a plant be frozen, the soul-form of the plant will be exactly represented in the ice. This was termed a re-birth or re-generation of the plant or animal—*palin*, again; *genesis*, birth. In his "*Palingenesie philosophique*," Bonnet, setting aside these fables, gives the notion a biological basis by assuming that in every animal there is a microscopic indestructible germ to which its soul is united, and which contains and maintains the personality of the animal, just as the egg or seed contains the future body, and which enables it to enjoy a future life—a view obviously and intended to be applicable to the philosophy of the resurrection of mankind, as taught by St. Paul. The future body of the animal will be wholly different from its past and grosser body, being a superior mechanism, and requiring less repair. This improvement will take place according to a law of evolution to greater perfection; so that in the "restitution" of animals, as Bonnet terms it, man, having attained to a higher perfection, elephants and apes with their Newtons and Leibnitzs will take his place; beavers with their Perraults and Vaubans, &c. The germs might also undergo a sort of transmigration; for Bonnet says that they may enter into a body and remain there until the moment of decomposition, then pass without the least change into another body, from this into a third, &c. "I can very readily conceive," he says, "that the soul-germ of an elephant may first be lodged in a particle of earth, thence it may pass into a bud of fruit, thence into the thigh of a mite," &c. Bonnet also held most clearly the doctrine of soul-evolution and development, and of plurality of existence to their utmost limits. There were many worlds, and in each world scales of existences. But each existence was in itself a scale of existence, "et toutes ne composent qu'une seule suite qui a pour premier terme, l'atôme, et pour dernier terme, le plus élevé des chérubims."\*

This hypothesis of evolution from germ-atoms through terrestrial life into a celestial and invisible sphere of existence ("the unseen universe," as it has lately been termed in a remarkably speculative book, in which the idea of the evolution and conservation of energy is the starting-point),† has had its fullest development in Louis Figuer's book, "The Day after Death."‡ Figuer advocates the doctrine of the re-incarnation

\* "Contemplation de la Nature," vol. i., p. 29.

† "The Unseen Universe; or Physical Speculations on a Future State." 1875.

‡ "Le Lendemain de la Mort: ou, la Vie futur selon le Science. Ouvrage accompagné de 10 Figures d'Astronomie." 2nd Ed. 1872.

of impure souls in the bodies of infants. He shows also the origin of a soul that animal germs are contained in plants and zoophytes, which pass at the death of the latter into the body of the organisms next in the scale of development, and so onwards in ascending succession, the rudimentary soul becoming more and more developed at each stage, until, emerging from the body of a mammal belonging to the superior species, the soul passes into the body of a newly-born infant. If the infant dies, aged under one year, its soul passes to another newly-born infant. When an adult dies with his soul sufficiently pure, it rises through the earth's atmosphere to the ether, to enter into the body of an angel or "super-human being." In this stage it undergoes a fresh series of evolutions, through an archangel or "arch-super-human being," until it becomes a "spiritualised being." This stage ends by its dissolving into its elements in the sun, whence they descend as emanations of its essence in the form of "animated germs," ready to enter plants and zoophytes, and go through the series of successional changes in their order. If the soul of an adult man be not sufficiently "ennobled and pure" at death, it must re-enter a newly-born child as often as need be. Plates illustrative of recent researches in Solar Science elucidate the text.

It would be easy to multiply illustrations of this kind of brain-work to any extent. Those given will suffice for my purpose, which is to show how the evolutionary development of an abstract idea gathers around it all the knowledge available to that evolution, or, rather, all the substrata which correspond to the knowledge in the individual. So that the ancient theory of living things being developed out of the mud of the Nile, and those now current which begin with elementary atoms, or with an infusion of hay are evolved according to the same cerebral process. It is by a similar process, therefore, that the morbid brain will work on the intuition of a previous existence. Since the two cases I subjoin were of persons with biblical knowledge we have in them the evolution taking a corresponding form.

1. Dr. Skae informed me that he had a patient in the Royal Edinburgh Asylum, a naval captain (and Dr. Clouston confirms the facts), who believed he had had a continuous existence of many thousands of years. He was formerly well acquainted with Methuselah, Noah, and other patriarchs and historical persons. He fluently described the characters of these persons as known to him when they were in life. He

knew Noah, for example, from his boyhood, who was a most genial fellow, but unfortunately he carried his geniality a little too far and fell into dissipated habits. He held also the doctrine of metempsychosis, and could tell persons then living through what animals their souls had passed. This conclusion was evidently founded upon some animal resemblance he perceived. Thus (as Dr. Clouston informs me) one of the assistant-physicians, who had a somewhat long and sloping nose, had to the patient's knowledge previously passed through life as a snipe. He had frequently changed his personal identity. Was formerly Alexander the Great, was lately the author of the Waverley novels, which he wrote several centuries ago to amuse his children, and finally Tiberius Cæsar, "Lord of Rome." He dealt with millions and increased the length of his past life as his mental disorder advanced. He commanded an army of 70,000,000, fourteen thousand years ago, and fought an equal number of the Macedonian army in Persia. A wound received many hundreds of years ago is still unhealed, and he had not had a good night's sleep for 1,200 years. He mixed up cosmological events with his personal histories; being 20,000 years old, he described the pre-historic periods of the earth, and knew of three floods greater than Noah's. He died of apoplexy, after 27 years' residence in the asylum.

2. Dr. Clouston introduced me lately to a gentleman under his care, who informed me that he is the prophet Elias, but was re-incarnated in the belly of his mother fifty-five years ago, when he was born as W— A— G—. He had been also other biblical prophets, as Malachi, &c. His conversation was incoherent, but he made reference to his biography which had been distributed through the earth and the heavens, indicating that cosmical ideas were being evolved with the others. The subjoined writing was elicited as an order to the General Assembly of the Church of Scotland then sitting; it gives an idea of the organic association of ideas:—"Executed to day 20th May, 1875. Royal Asylum, Morningside. At the Divine Earthly Hierarchy \* \* \* 1. Execute to the 2 Gods, the 2 Christs, human born of the Virgin Mary, viz., W— A— G—. Prophet Elias, &c., &c. Divinity, Divinity, and to S— P— M— alike Prophet Elias, Divinity, Divinity, to each personally a gift for 3,000,000,000,000 (Three Billions) of times, 11,000,000 (Eleven Millions) of times, 46 times one Million, Eight hundred thousands Trillions of times, the value of every

gift," &c. 2. "Then disburse this gift order to all classes of persons of The Universe 2 Worlds, so called, at grades rank, a gift to each personally, a gift also to the Spiritual Divinities according to their grades rank, &c." "By order as prefaced W— A— G— Prophet Elias, &c., &c., Prince, &c., and Duke of Bordeaux of France, Rex William 5th of Great Britain and Ireland absent on sick leave. King of Kings, Lord of Lords, and God of Gods of the Holy Bible," &c.

If this patient had had his attention directed to his reminiscences instead of to his powers as the Prophet Elias, a more instructive transcript of brain-work would probably have been the result. Comparing it with that of the case of general paralysis detailed *ante*, it is seen that while in the latter the reversion was to birth, with theological and cosmical ideas, and infinity as to numbers (Fig. 6), in this case it transcends birth ideationally. In the first case the feeling of pre-existence evolved the idea of continuous existence; how far cosmical and infinitesimal ideas were associated is not on record.

In comparing the phenomena of reversion as seen in bodies of men and in nations, the element of race is of primary importance, because the reversions will be to racial modes of thought. Thus the avowed return to metempsychosis and the grafting of Druidical metaphysics on Christian theology and modern science observed in France, must be taken in connection with the attempted return by the French Communists to tribal and dissevered communities as the best social organisation. In both the theology and the politics we recognise mental characteristics of the inhabitants of ancient Gaul and perhaps of the Celtic races generally.

Beyond all these accumulated racial characteristics and their manifestations from time to time, as evolutions and reversions, the laws of cerebral development common to every race have to be considered. This would, however, lead to a discussion of the principles upon which systems of philosophy and of social organisation are evolved, and of the reason why history repeats itself in both philosophy, theology, and national growth—a subject too large for a short essay. It is enough to say here that such discussions would show that the organic laws of personal and ancestral races may apply equally to these general phenomena of the human mind.

*The Morisonian Lectures on Insanity, for 1873.* By the late DAVID SKAE, M.D., F.R.C.S.E., Physician Superintendent of the Royal Edinburgh Asylum, &c., &c. Edited by T. S. CLOUSTON, M.D., F.R.S.E.

(Continued from Vol. xx., p. 18.)

## LECTURE VI.\*

*Anæmic Insanity.*—This is the variety of insanity produced by exhausting discharges, loss of blood, or starvation, and takes its name from the condition of anæmia that precedes and accompanies it. Dr. Aitkin says that “any acute disease which occurs in an anæmic individual assumes a peculiar character.” Now this is precisely what occurs when such an individual becomes insane. There are two very distinct kinds of anæmic insanity, which may be called the chronic and the acute. The chronic results from anæmia produced gradually by exhausting discharges or such slow processes. Its symptoms are precisely those that Dr. Skae described as occurring in the insanity of lactation without the sexual characteristics of the latter, so that I need not occupy your time in describing them. The most important characteristics are the premonitory giddiness, flashes of light, singing in the ears, headache. The acute variety follows great and sudden losses of blood or starvation. It is most typically seen in the latter condition. At first there is a state of mental prostration, with pale and cadaverous countenance, wild and glistening eyes, severe pain in the epigastrium, and an intense thirst; then the mind becomes quite imbecile, so that the patient will make no effort for his own benefit, and after this a state of maniacal delirium, with hallucinations of the senses, comes on. The patient sees ravishingly cool and limpid streams and green fields, which if he is at sea he will at once jump overboard to reach, he tries to sing, and converses with imaginary friends. This is soon succeeded by coma or convulsions and death. But if food is given before this, the patient often remains for a long time delirious or imbecile in mind, cannot get rid of his hallucinations, and cannot exert his mind in any way.

\* To prevent mistakes it may be mentioned that this lecture was written entirely by Dr. Clouston.—T. S. C.

*General Paralysis.*—This disease is not only a variety of insanity, but a true pathological disease of the nervous system, as distinct from all other varieties of insanity and all other nervous diseases as smallpox is from scarlatina, or consumption is from rheumatism. When the great French physicians, Calmeil, Delaye, Bayle, and Esquirol, in the beginning of the century, first seized on a particular group of mental symptoms, associated them together, found they had a regular sequence and history, that they were connected with certain obvious departures from the normal state of the brain and its membranes, and when they gave their generalization a name and called it “General Paralysis of the Insane,” they sounded the death-knell of all the metaphysical and spiritual theories of insanity. And it is well that it should have had for a basis such an unassailable medical deduction. It did not cover much of the unoccupied ground of nervous pathology, it did not directly throw very much new light on any other disease of the brain, and above all it had nothing to do with any premature theory of nerve function or nerve disease; yet its importance to the study of insanity was incalculable. I believe that the further and fuller study of general paralysis will do more for the elucidation of many of the unsolved problems as to the connection of mind with brain, nay, as to the connection of motion, sensation, and animal heat with brain, than that of any other disease. Did we know everything about general paralysis and epilepsy, we should find the path of research into most other diseases of the nervous system comparatively easy. They would be the key to all the rest. As we shall see, there is no group of nerve-cells in the body that is not affected in general paralysis, and almost no nerve function left intact. The existence of this disease is certainly by far the best justification for such a system of classifying mental diseases as that of Dr. Skae, which aims at distinguishing from each other the true *diseases* affecting the cerebral convolutions, and not merely ticketing groups of similar symptoms with a name. It is quite certain that under the term insanity there are included many pathological species of brain disease, just as distinct as general paralysis, which we shall ultimately be able to segregate and distinguish. Dr. Skae did not pretend that his varieties were, with one or two exceptions, of this class, but he went a step in this direction, and helped to move the coach out of the rut of mere symptomatology.

I have no need to vindicate the existence of general para-

lysis as a separate disease in any respect. I have scarcely any need to describe its symptoms in detail, so well known are they to the profession at large now. I shall rather endeavour to look at its symptoms in groups as they result from different parts of the nervous centres being affected by the pathological process in different degrees of intensity. As is well known, the disease presents great variety in its symptoms, both in different cases and in its course in the same individual. We have maniacal, melancholic, and demented general paralytics. We have some patients with the disease whose legs are chiefly paralysed; others whose arms are so; and others who have partial hemiplegia. And the more we analyse the functions of the nervous system, and the great divisions of the mind, the more do we see that these are affected more or less strongly in physiological or psychological groups.

Before treating the symptoms of the disease in this way, I shall refer to a singularly barren controversy that has been carried on as to the real nature of the disease. The question at issue is this—"Is general paralysis a bodily or a mental disease?" On the one side it is said that it is a bodily disease with mental symptoms generally present; on the other, that ordinary insanity has sometimes those paralytic accompaniments. The strong argument brought forward in favour of the former view is, that all the bodily symptoms of the disease are said to occur without mental aberration. Many German physicians hold this view. The only reason why such a controversy should ever have been started, arises from the medically false theory that insanity is a special and distinct condition that enters into a man and takes entire possession of him when sanity leaves him. The one moment he is sane, responsible, and a living man in the eye of law, the next he is insane, irresponsible, and legally dead. This question of responsibility is of course one that has often to be settled for judicial purposes, but why should it have anything to do with the medical view of the nature of a disease? General paralysis is a disease affecting the whole of the nerve centres, that may show the first signs of its presence in one part or another, in a motor centre, a sensory one, or a mental one, but that will, if time is given it, spread to all the others, interfere with their functions, and ultimately destroy them. It is not doubted by anyone that it destroys the mind function just in the *same way* as it does the bodily one, through a physical change in the nerve cells.

No one denies that, even in the cases said to be without insanity, the memory becomes weakened, the intellectual power gradually fades away, and all the mental operations get slow and feeble. In some cases no doubt the patient dies of an epileptiform fit, or some other disease after the paralytic symptoms have appeared, and before there was any apparent trace of mental weakness. The disease had begun in the motor centres, and had not reached the mental in such a way as to interfere with their functions much. In such a case it has been asked, should the general paralytic patient be counted as insane? Should he be allowed to make a will, or to commit murder without being hanged for it? My reply is that these are questions that do not affect the position of the disease in a medical nosology, and that we must not break the unity of a true pathological species through any merely accidental or legal definitions that set up insanity as essentially different from other diseases of the nervous system. In many reports of lunatic asylums I find the diseases under which the patients laboured put down as mania, or melancholia, or dementia, with general paralysis. Now this is precisely as if a patient were described as labouring under a pustular eruption with small pox, or as suffering from delirium with typhus fever. It would of course be perfectly legitimate to distinguish between the different states of general paralytics by describing them as labouring under general paralysis with mania or melancholia, &c., just as it would be to say small-pox with pustular eruptions, or typhus with delirium. As a matter of fact no case of general paralysis of long duration has ever been reported by a competent observer, in which all the mental operations were vigorous. I have in my mind at the present moment the case of a man of great mental capacity and vigour of body and mind, who has for some twelve months had the speech and occasionally the walk of general paralysis. Anyone seeing him and speaking with him for a short time would be able to discover no mental defect whatever. He sometimes writes excellent letters, too, going into all sorts of business matters most clearly; and as for delusions, he is as free from anything of the kind as any one of us. Yet are his mental operations not impaired? They are so most evidently, in this way. In the first place, everything like mental effort of any kind whatever, especially anything that requires originating power, such as writing a business letter, is attended with an enormous effort, and is followed by complete exhaustion, so that he can do nothing more that day. At

certain times, too, he can by no effort of will do anything of the kind; cannot compose a line, or put a pen to paper if he tried as hard as possible. Then his intimate friends see that his memory is really much impaired, though it is only they who would observe this. Instead of being an active man, doing the work of three men both in body and mind, he does and can do no work at all. Instead of leading and guiding other people, and taking the lead among all with whom he comes in contact, he is content to submit himself to another's will. Now this man is clearly not "insane" in any sense of the term, legal or even medical; yet are not his brain cells that minister to his mental operations being interfered with in their action by a disease that is only too sure still further to invade, and at last to abrogate, their functions? Should we be justified by any pathological rule in separating this case in any way from the other cases of the same disease where there are delusions, and who are reckoned insane? Looking at the case from a purely psychical point, is not his mind diseased? If the answer is in the affirmative, then we know, as physicians and pathologists, that this results from a bodily disease of a kind that, in most cases, produces delusions and true insanity, which I should fear would be only too likely to occur yet in this very case. The question therefore is a mistake entirely, whether general paralysis is a paralysis complicated with insanity, or a form of insanity complicated with paralysis. It may be either the one or the other to begin with, but is always both at the end, if the patient lives long enough to run its natural course. In reality it is a pathological disease of the central nervous system, with mental and bodily symptoms. One of the very latest writers on insanity, Dr. Blandford, whose book is generally so reliable and so practical, has a sentence in his chapter on general paralysis in which he professes to sum up our knowledge in regard to its pathology, that is so extraordinary and so unsupported by facts of any kind, symptomalogical or pathological, that one would fain believe it had been inserted by a mistake. It is this—"there is every reason for supposing that the mental and motor disorder depend on pathological states which, though they co-exist, are independent one of the other." Of course they are independent so far as the motor and mental elements of nerve tissue are independent, but that the pathological state of the one is of a different kind from that of the other, as this sentence would seem to imply, we have not the remotest ground for believing, but on the

contrary, have every possible ground for the opposite belief, that they are identical.

I have occupied so much time in the discussion of this point, because it is one as to which some confusion prevails, and even medical men are led away by the legal aspect of the question and by the artificial distinctions conveyed by the term insanity.

Dr. Skae has drawn a very able and graphic picture of the usual mental symptoms of a typical case of general paralysis.\* “*Most frequently* there is, preceding the development of the paralytic symptoms described, or accompanying their development, an attack of a peculiar form of mania so often associated with general paralysis as to have been called *mania paralytica*, and, from its character, *delire ambitieux* by the French writers. This peculiar delirium is very common. The patient fancies that he is possessed of enormous wealth; he is full of projects for the benefit of mankind; he is about to purchase and endow libraries and churches for the public good. He is a prince, ennobled by the Queen, about to marry a Spanish countess; he is possessed of fleets laden with gold and diamonds. The house in which he lives is a palace; all the attendants and females are his lords and ladies; the walls are gilded, the windows are made of diamonds; he himself made the sun which illuminates them; he is a mighty conqueror, and destroyed Sebastopol, captured the Emperor of Russia, but graciously pardoned him; he is God himself, and wields universal and omnipotent power. He can talk any language, he can sing (and he does sing readily, but most discordantly); he can write most beautiful novels and enchanting poetry. He has carriages and horses without number—steamboats waiting to convey him to London to see the Queen—confidential missions from Lord Palmerston—schemes of universal conquest or universal philanthropy.

“In the midst of all this imaginary power and grandeur, he is (and this is a very characteristic feature of general paralysis as compared with other forms of insanity with similar delusions) docile and *facile*; he is diverted from the highest enterprise or the most important duty by the simplest request; he forgets the conquest of Europe, or the immediate commands of Her Majesty, for a walk round the airing-ground with an imbecile companion, to whom he talks condescendingly, promising him a dukedom or a bishopric. Everything about him is good—every one is so kind—his food

\* Ed. Med. Jo. April, 1860.

is first-rate, he offers a cheque for £75,000 for the purchase of the asylum, and promises to endow it with unbounded munificence, and to convert it into a paradise of brilliancy and bliss.

“Sometimes the first indication of the disease is afforded by some act of foolish extravagance. A person of frugal and prudent habits purchases a number of pictures, some of them little better than sign-boards, which he represents as Raphaels or Titians ; he orders whole libraries home, of perhaps six or eight dozen of gold pencil-cases ; or he purchases a worn-out hack, and boasts that it can trot to Glasgow and back with a dog-cart and four persons behind it, in an hour. Not unfrequently, while the conversation appears still rational, and any foolish act of extravagance has an ingenious explanation, the person will be found to be accumulating in his pockets or desk bits of glass or trash of various kinds, under the belief that they are precious stones.

“The general paralytic varies in one remarkable and very constant feature from the maniac or monomaniac ; he is neither suspicious nor resentful ; he dislikes no one, suspects no one, nor would he offer an injury or insult to any one.

“This disease suddenly seizes its victim in the prime and vigour of life, when he has acquired, by unexampled industry, it may be, a high position in the profession which he adorns. Arrested suddenly, in the height of prosperity, he gradually degenerates into a state of hopeless fatuity, and dies when far beyond the reach of friendly consolation. During the progress of his rapid decay, he is insensible to all the ills of life, the grief of friends, the ruin of his hopes, and fame, and family ; he staggers about boasting of his wealth and grandeur ; and even when hardly able to swallow, powerless to move and on the brink of the grave, he is babbling in a speech, no longer articulate, that he is ‘my lord duke,’ and that it is ‘all right.’ It may be consolatory to think that the sufferer is thus unconscious of his condition ; but it adds, I think, painfully to the features of the disease, to see so much boasted grandeur and wealth associated with so much physical and mental degradation.”

Such is the picture of a typical case which no medical man will have any difficulty in recognising if he comes across it ; but, as we shall see, a large number of the cases do not answer to this description at all. It is for the detection of these exceptional cases that we require to understand and take into account the true pathological nature of the disease.

I shall not detain you with a description of all the well-known motor symptoms of the disease. They vary in intensity from the slight tremble of the upper lip and the shuffle, and thickness in the articulation of a long word with many consonants, which are only detected by the practised observer, but which when once observed mark the presence of the disease with absolute certainty, and doom the patient, to the complete paralysis of all the voluntary muscles found in the last stage of the malady. As I remarked, they may affect the most various sets of muscles in greatest intensity. Some patients can't articulate a single word distinctly, who can walk and run and write quite well, others can't walk a step who have scarcely any defect in articulation. It is an interesting fact that patients labouring under this disease will often articulate the first words of a sentence quite well and then begin to fail, and they will often walk quite well at first, when setting out for a walk, but soon get weak and straddling in the legs. Those facts point to an essential weakness in the nerve power. Coming under the motor abnormalities of the disease, too, are the congestive epileptiform attacks, which vary in intensity from the slightest loss of consciousness, or the twitching of a few muscles, up to continued convulsions lasting for days in succession and killing the patient, and which, in regard to frequency in different cases, may be entirely absent during the course of the disease, or there may be one such attack every week while the patient lives.

That the function of common sensation is affected in the disease is abundantly shown by the entire absence of pain on injury that exists in some of the patients, and there is another symptom very commonly present at the commencement of the disease that is not sufficiently dwelt on by writers on the subject. This is the flying pains or the fixed "neuralgic" pains that the general paralytic often suffers much from. I have seen some patients with the most severe headaches before the characteristic symptoms of the disease appeared, and others who had them during the whole of the attack in all its stages, others who suffered from tic and neuralgic toothache; others from a pain in the region of the heart; others from gastralgia; others from a sense of choking and difficulty of breathing. In fact these disorders of sensibility are as numerous as the nerve centres that regulate them. All those pains are of central origin. I now look on the occurrence of such pains before an attack of insanity as a

very bad sign, and they often strengthen my diagnosis of general paralysis in my own mind.

A good deal has been written as to whether the reflex function is interfered with or not. A very obvious distinction has, it appears to me, been lost sight of by many of those who have treated this part of the subject, by not remembering the nerves that arise in the brain and those that rise in the cord. The reflex action in the muscles, supplied by the cerebral nerves, is interfered with from an early period of the disease, as is seen by the impaired deglutition, the length of time a patient will sometimes take to shut his eye when an object is brought near it, and the insensibility to tickling about the face. This is what we might expect from the brain being the organ chiefly affected in the disease. The reflex function of the cord is not ordinarily much interfered with till the very end of the disease. In the beginning of it the patients are unusually sensitive to tickling the soles of their feet. This is also what one might expect from the symptoms of the disease. The cord is not ordinarily the first part affected, and as usually happens when the brain power is lessened, and there is less voluntary control exercised over the cord, its automatic functions have more play.

The special senses are often affected towards the end of the disease. Dr. Skae says—"The senses become blunted and impaired." "In several cases I have seen amaurosis associated with general paralysis." I have had a case who had entirely lost the hearing in one ear, and I have had patients who could not distinguish between milk and a solution of quinine.

Lastly, the nutritive system is markedly interfered with. At the beginning of the disease a loss in weight, a thin, pinched appearance of the features, and at a certain stage in some cases a well-marked marasmus and emaciation is often met with. Then in the second stage there is the well-known tendency to the formation of a flabby fatness. The pulse and heart's action are strongly influenced by the disease. Whenever there is the least tendency to brain excitement the pulse has a peculiar fullness and hardness. The pulse of a general paralytic in this stage I look on as one characteristic of the disease. At this stage in the disease (the second) sores and wounds heal with extraordinary quickness, the latter often by the first intention; at a later stage there is the most extraordinary tendency to form bed-sores. After death,

too, all the soft tissues are generally found soft and flabby; decay takes place in the body very quickly, and, as I first pointed out three years ago, the bones are softened and their structure altered. This has been proved abundantly since then by chemical analysis, and the test of the amount of weight a rib will bear when taken out after death. Lastly, the temperature in general paralytics is increased, and especially the normal relation of the morning and evening temperature is reversed. Dr. Saunders, of the Devon Asylum, was the first to show that after the epileptiform attacks the temperature in general paralytics rose very much, and in 1868 I made a great number of observations in regard to the temperature of the body in the insane,\* the result of my observations being that while in all forms of insanity there is a tendency to the rising of the temperature, and especially of the evening temperature, in general paralysis this tendency found its acme. I found that in every case of this disease if the observations were repeated sufficiently often, the average evening temperature was higher than the morning temperature, that it varied more in the different stages of this disease than in those of any other form of insanity, being high in the first and third periods, and low—considerably lower than the standard of health—in the second or quiet and fattening period of the disease.

Looking at all these symptoms can we pick out the essential conditions of the disease—mental and bodily—as distinguished from the accidental and transitory? First, in regard to the mental symptoms. I do not think the delusions of grandeur, the *Delire ambitieux*, can be regarded as such. They are most striking certainly, and by far the most effective in painting a picture of the malady. But they only occurred in about half of Dr. Skae's 108 cases, and I have gone over the cases of 85 patients, from a more country district than Edinburgh, that I have had under my care during the last ten years, and find that of the 68 men only 30 had such exaggerated notions, and of 17 women only two had anything of the kind. I look on the peculiar character of the mania—where there is mania—as being much more really symptomatic. It partakes of the character of *weakness of mind and facility* from the beginning. I look on the delusions of grandeur and wealth and the acquisitive propensities as being the former day dreams and tendencies

\* "Jo. Men. Sci.," vol. xiv., p. 34.

of the individual which he was sane, uncontrolled and uncorrected by judgment and reason, just as an imbecile can be made to believe such things if he is told them. I have found that it was the vain, boastful, ambitious men before, who were the kings and millionare general paralytics. An excited general paralytic in an asylum ward never knows which patient he can annoy with impunity, and which he cannot. He is always doing, or trying to do, utterly absurd and obviously impossible or irrationally dangerous things. He will try to break open doors, to make a bolt away from an attendant whom he might know can catch him at once. By this very unthinking boldness of his strategy he often succeeds in his object, but having done so can make no use of his advantage. If he escapes from the asylum he asks his way from the first policeman, telling him where he has come from; if he steals another patient's pipe he goes to the nearest fire to light it. His delusions of the most outrageous absurdity are paraded before imbeciles whom any other class of patient would know could not appreciate them, and he is utterly insensitive to any ridicule of them. No other class of patients ever make themselves so supremely and childishly ridiculous as general paralytics, but they will even believe in the insane pretensions of their fellow patients.

The depression of the disease, when it is present, has a want of fixity and tenacity, a point that also indicates an essential weakness of the mental fibre. They do not express an active misery, but there is a cloudiness and haziness about their melancholic thoughts. I have only known two general paralytics require forcible feeding. The very dementia of general paralysis is all its own. It more nearly approaches extinguishment of all the mental faculties than any other dementia. The emotional and moral faculties in general paralysis always indicate the extremest weakness. They are excessively emotional in a silly, childish way, laughing and crying at trifles; changing from laughing to crying, from passion to smiles, like the sunshine and showers of an April day. You can play on them as on an instrument, bringing out joy or grief, anger or love just as you please. There is no sense of right and wrong left from the beginning in most cases. The religious, moral man takes to bad courses; the truthful man ceases to distinguish between truth and falsehood.

Then, turning to the motor symptoms, we see that they in reality proceed from feebleness of the central nerve batteries. The most delicate nerve co-ordinations that have been the

last and most difficult ones to acquire, are the first to be lost. The power of articulation of long and difficult words and sequences of words, the flexibility of voice that has charmed its listeners, the delicacy of action of the vocal cords in the opera singer on which all Europe has hung enchanted, are lost long before the coarser muscular combinations are in any way affected, or the actual muscular force that can be exerted is even touched. Comparing these effects with what we know of the functions of the brain, do they not show simple feebleness of action in the highest regulating centres?

Taking the motor and mental first symptoms of the disease together they can be imitated in some people more closely by the drinking of a certain amount of alcohol, than in any other way. I have seen a man in whom the whole sequence of symptoms of general paralysis could be artificially produced by his drinking one glass of whisky after another, from the initiatory slight thickness of speech through the ambitious delusions and boastfulness to the final dementia.

Then, as we shall see, the effect of certain cerebral tumours is to produce motor symptoms almost identical with this disease, causing also the epileptiform attacks, and mental symptoms which in many respects bear a resemblance especially to this kind of imbecility.

Do the common and well-known causes of the disease tend to throw any light on its real nature? There can be no doubt, from the recorded statistics, that there are two causes that above all others, taken singly, and still more when they are both combined, produce the disease. Two-thirds of all my cases were from those causes. Those are intemperance and sexual excesses. Now the one causes brain irritation, and the other brain exhaustion, two effects that are almost synonymous in regard to their final effects on the nervous system. The disease prevails to by far the greatest extent, however, among a class who add to those two things, great muscular exertion, viz., the coal and iron workers. The disease is more than thrice as common in Durham and Glamorgan as in the rest of England. In such a class, therefore, three of the very strongest causes of brain exhaustion and irritation are applied at once. The candle is burned at both ends and in the middle.

I think I am right in stating that the course of the disease and its prevalent symptoms and direction are very much

influenced by the cause. In the cases where drinking has been the cause there is usually much more acute and delirious excitement, a higher temperature, and a slower course. Dr. Blandford thinks that there is a longer duration of the disease among the higher classes and that this is owing to the better nursing they get. I doubt the fact, but it may be that in the miner his brain having been irritated and poisoned for years by impure liquors a more acute form of the disease is set up.

But the light to be thrown on the nature of the disease by an examination of its causes is not complete without looking at the less frequent causes, as well as those I have mentioned. I find that 32 of Dr. Skae's 108 cases were caused by mental causes, such as brain work, over-anxiety, over-excitement, grief, disappointments, shocks. This is a large proportion, and you will observe that the effect of all of them is to produce severe brain irritation and exhaustion. Even the causes of the disease, that only occur very rarely, such as blows to the head, which were assigned in seven of Dr. Skae's 108 cases, and in three of my 85, have the same character in common with the other causes, viz., brain irritation.

It is well known that a hereditary predisposition to insanity, or even to diseases of the nervous system, is seldom present in cases of general paralysis, and no previous weakness of the nervous system in any way has usually shown itself. In fact the disease usually occurs, as Dr. Blandford says, "In men who are not only in their greatest vigour, but often fine, handsome, powerful men—men who have enjoyed life, and lived hard." "The paralytic patient has rarely had to seek aid from doctors." It "crushes the strongest in his full prime, terminating both reason and life."

On the other hand it does not, I think, begin at once as many writers on the subject would have us believe. Such has not been my experience in most of the cases where I have been able to make careful and full inquiry into the habits and life and feelings of the patients for two or three years before the outbreak of the disease. I am sure its premonitory symptoms, which are really a part of the disease, often begin long before the actual visible paralysis. The man has not been able to do his work; he has not had the full enjoyment of life that marks perfect health; he has had neuralgic pains, or he has been in a low way for a time.

All those first symptoms really show a weakening of the power of the nervous system, and of that part of it that ministers to the mental operations, presides over all the others and makes the man. In some of my cases I formed the opinion that the seeds of the disease were sown many years before its actual development, and that the man in his prime suffered for the sins of his youth.

The pathological changes that are found in the central parts of the nervous system after death, while they account in most cases for the later symptoms, do not tell us the true nature of the disease, and where it arises. They are all referable to mere degeneration. The cells of the brain are found fatty or shrivelled; the connecting tissues increased and more fibrous. The membranes are, in almost all cases, thickened, and their fibrous elements increased. Westphal has shown that the same changes are found in the spinal cord. Drs. Princaré and Bonnet have demonstrated that the nerve cells in the sympathetic ganglia are fatty or full of pigment or shrivelled. Dr. Clifford Allbutt has demonstrated that during life the retina is found diseased. In fact nearly every important aggregation of grey nerve substance has one after the other been shown to be diseased or abnormal when examined microscopically, just as every function of the nervous system we have seen to be weakened and interfered with. The complete appropriateness of a name was never before so well justified as that of "*general paralysis*" which Calmeil gave it long before those universal pathological changes were demonstrated.

The most interesting field of pathological inquiry in this disease is the tracing a definite connection between the symptoms present during life and the amount of disease present in the different parts of the central nervous system. Considering how the symptoms, motor and mental, are often so limited and special, we have here a wonderful field of physiological as well as pathological observation. No experiments in injuring or faradising limited portions of the brain could be more perfect than what occurs in this disease. The chief difficulty is that so few patients comparatively die in the early stages of the disease, when the symptoms are local and more limited to groups of muscles or groups of mental faculties, and in the end the disease has spread to all the nervous system. In the cases where the mental symptoms have been most severe, I have found that the anterior and upper convolutions of the brain are most

affected. I have also observed that the cases which have been very subject to epileptiform attacks had more disease at the base and in the 4th ventricle. Westphal has described cases where there was paraplegia for years before obvious mental symptoms appeared, and where the spinal cord was found completely tabic. I think I have noticed that where the speech has been specially affected there was obvious disease in the region of Broca's convolution. Certainly I have noticed that it is usually the cases that have the speech least affected that live the longest, while those who have most epileptiform attacks die soonest, the disease in the latter being more in the region of the centres of organic life. But this whole field has not been fully worked out as to details.

You are probably aware that the first theory as to the real nature of this disease was Bayle's, viz., that it was a chronic meningitis; and the latest is that of Poincaré and Bonnet, supported by Westphal, and evidently favoured by Dr. Blandford, that it originates in the vaso-motor ganglia, and "that the alterations of the encephalon are the mere consequences of the disorders which this sclerosis, by a paralytic action of the cervical ganglia, produces in the cerebral circulation." This latter theory is, so far as I am aware, only supported by four facts, in addition to the state of the cells of the sympathetic ganglia (a condition, by the way, which my own observations would show to be very little marked indeed as compared with the condition of the cortical substance of the brain):—1. The analogy of the well-known effect of alcohol in first partially paralysing those vaso-motor centres, and when pushed a little further, affecting the co-ordination of the muscular centres of motion. 2. The effect of tumours inside the brain, which, by retarding the out-flow of blood from the venous tissues inside the skull and so increasing the blood pressure from the arteries, is known to cause progressive disease of certain parts of the nerve substance and optic neuritis. 3. The thickened state of the capillaries and small arteries after death in general paralysis. 4. The common occurrence of small extravasations of blood in the brain after death.

Certainly, these facts show that the blood-vessels and circulation of the brain are affected in this disease, but are they not much more rationally explained by supposing that the paralysis of the vaso-motor nerves and ganglia, which causes those changes in the arteries, is just one part of the universal paralysis that characterises this disease? What reason have

we for supposing that it is the *fons et origo mali*? Neither the causes of the disease, its first symptoms, or its most marked characteristics, point to this the most obscure of all the divisions of the nervous system. Perhaps the present obscurity of their functions is the real reason why disease of the vaso-motor nerves and ganglia have been selected as the hypothetical cause of general paralysis.

Certain deductions can be made with great certainty in regard to general paralysis, from the facts relating to its causes, symptoms, and pathology which I have indicated.

1. That it is a disease of the grey or cellular parts of the nervous system.

2. That it illustrates better than any other disease with which we are acquainted the tendency to that progressive degeneration which specially characterises the diseases of the nervous system; for it not only goes on steadily from bad to worse, but advances into ganglia, such as the retina and sympathetic, that have no continuity with the brain except by white fibres.

3. The disease is in all its symptoms—mental, motor, sensory, and vaso-motor—chiefly characterised by symptoms of weakness of power and want of co-ordination—is in fact, essentially a dementia and a paralysis from the very first.

4. The stage of maniacal excitement of the disease is accompanied by such increase of temperature and symptoms of congestion of the brain as strongly to point to its being the result of a process, either inflammatory or closely allied to it, not affecting the meninges only, but more especially the cortical substance.

5. That the excitement and the congestive attacks are accompanied by stasis of the blood in the capillaries of the pia mater, as shown by the tendency to apoplexy and false membranes. Those false membranes seem to hold an intermediate position between the products of ædema and inflammation.

6. That the origin of the disease is usually in exhaustion or irritation of the brain-cells that regulate and control the co-ordinating centres of mental function and motion—in other words, that element of the nervous centres that has the very highest and most important functions of all—that this irritation or exhaustion sets up a diseased degenerative process in them, which slowly but certainly spreads to every group of cells in the nervous system with which those higher centres have direct relation.

7. That so far as our present pathological facts go we have more reason to suppose that the disease begins in the outer layer of the cortical substance of the brain than in any other part, but that it may first affect different convolutions in different cases.

*Insanity from Brain Disease.*—By using the term insanity from brain disease Dr. Skae, of course, did not imply that any form of insanity can result from anything but brain disease. He meant by “brain disease” here what is usually called organic disease of the brain. I shall merely refer to two kinds of this disease—softenings and tumours—each of which, when they produce mental disturbance at all, undoubtedly cause a very distinct type of insanity.

The insanity of softening of the brain is familiar to us all, in a mild form, in the childishness and forgetfulness and irritability of the man who has had an attack of apoplexy with partial hemiplegia. When it assumes the form of more developed mental aberration, it simply consists of more or less excitement, suspicion, or depression engrafted on this childishness, and coming on in spurts. I have known such patients, when melancholic, to be extremely suicidal.

The insanity that results from tumours of the brain is of a somewhat different type. It is characterised at first by irritability, loss of self-control, and a change of disposition, sometimes by depression, especially if the tumour is situated near the pons varolii. As the tumour grows, a blunting of the whole mental faculties takes place that gradually passes into coma. An extreme irritability beyond the control of the patient is the chief characteristic while there is any consciousness left. The chief bodily symptoms that accompany these—and they always do so—are intense headaches to begin with, usually felt at the back of the head; then a loss of power in the extremities, then a want of co-ordination of the muscles, and a speech very closely simulating that of general paralysis; occasional congestive or epileptiform attacks precisely similar to those of that disease; at some stage of the disease loss of sight from optic neuritis; and, lastly, complete paralysis and coma.

In a paper on the subject of “Tumours, in their Relation to the Mental Functions of the Brain,” published last year,\* I came to the conclusion they have distinct effects on the brain substance. 1. They create an irritation tending to ramollissement in the nerve substances with which they are in contact,

\* Jo. Ment. Sci., vol. xviii, p. 153.

after they have existed for a time and as they grow. 2. They cause pressure on distant parts, which, in its turn, causes an alteration of structure and nutrition. 3. They set up *progressive* disease and degeneration of certain parts of the nerve structure, such as optic neuritis, the true nature of which is not yet very well known; but it seems to be in some way directly connected with the essential constitution and nature of all sorts of nerve substance, whether cells or fibres. And lastly, that all cases of insanity from organic brain disease seem to hold an intermediate place, so far as mental symptoms are concerned, between acute inflammation of the cortical substance and blood poisonings on the one hand, and ordinary typical insanity on the other, the mental characteristics of the three being represented by delirium, irritability, and delusion respectively.

*The Hereditary Insanity of Adolescence.*—This is a long name and a somewhat clumsy one, but I cannot devise a better. In a conversation I had with Dr. Skae before his death, in reference to the influence of hereditary predisposition, he agreed with me that there was a very distinct form of insanity that we often meet with in the members of families strongly tainted with a neurotic inheritance, about the age of 20, or from 18 to 25, just as the patient is coming to maturity. Usually no cause whatever can be assigned for the coming on of the disease. In very many cases the patients have been most promising and healthy up to the time of the attack. In comparison with their brothers and sisters they have frequently been the most steady and studious. In fact, such persons come to maturity sooner than usual, and have been more free from youthful livelinesses, and less drawn to the other sex. They have been men and women almost before their time. The form of insanity that attacks them is always a sharp attack of maniacal excitement, coming on suddenly, and, as I remarked, usually without any sort of real assignable cause. Anxious parents will be sure to devise a cause of some sort. They have been too studious, they have worked too hard, they have not taken amusement or exercise enough, they have had a cold or some trifling ailment. In cases of this sort, almost more than any others, are the bright hopes and fond anticipations of parents blasted and crushed; for the majority of such cases never recover at all, and those who do are very apt to have relapses. After a short attack of excitement the mania passes away, leaving the mental powers dulled and weakened, and after a few

irregular spurts of excitement or transitory brightenings up, the patient sinks into hopeless dementia, but with excellent bodily health, so that he lives apparently as long as though the brain functions had remained perfect. Such cases form a considerable part of the demented that fill our asylum wards. This variety of insanity is, I think, quite a distinct and well-marked one. It is the purest type of hereditary insanity, and might be well called simply by that name, if that would not be likely to lead to confusion. It seems as though such persons had in the twenty years they have lived exhausted the original power of their brain convolutions. They are examples of like begetting like, for in most cases insanity has occurred in ancestors not far removed. They only inherited brain power enough to carry them up into adolescence, instead of having, like an ordinary human being, enough to last while the rest of the body lasts. It is a sort of premature dotage of the brain between 18 and 25. They have thus died in their youth to all the passions, the cares, and human interests that occupy other men. It is an example of Nature's mode of stopping the reproduction of disease. However hard on the individual, it is certainly good for the race. In fact, I think I have often observed that all the hereditary taint in a family seemed to go to such a case, while all the rest of the members of it remained quite free from neurotic symptoms. I have thought it a good sign for the others, if one of a family was thus affected. He was the scapegoat for the rest.

*Idiopathic Insanity.*—By this term Dr. Skae meant every case of insanity caused by purely mental or moral causes that did not come under any of his other varieties. He thought that in nearly all cases the exhaustion of brain produced by want of sleep was the immediately exciting cause of the disease. Contrary to the common belief that insanity is *usually* the result of severe disappointments, anxieties, afflictions, and distresses of life, we find, as a matter of fact, that only about one-fourth of all the cases are so caused, and of these about two-thirds can be usually referred to some of Dr. Skae's varieties, leaving about one-tenth or one-twelfth of the total number of the insane that are really idiopathic.

This variety Dr. Skae divided into two kinds: the sthenic and the asthenic, which he thus distinguishes: "*Sthenic*, when combined with distinct symptoms of vascular action—suffused eye, throbbing temples and carotids, hard and full pulse, occurring in persons in robust health, and brought on most

commonly by causes of a nature calculated to excite the emotions and passions. *Asthenic*, when combined with symptoms of *Anæmia*—emaciation, feeble pulse, cold extremities, and so forth; and brought on by causes conducive to an anæmic condition—exhaustion, and especially want of sleep, however induced, whether by grief, anxiety, over-taxed brain, poverty and starvation.

Such is a very imperfect sketch of the different varieties of insanity which Dr. Skae thought deserved to be reckoned as distinct natural orders.

And now permit me, Mr. President and Gentlemen, to thank you very cordially for the respect you have paid to Dr. Skae's memory, and the honour you have done me by your attendance at this course of lectures.

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*On Syphilitic Affections of the Nervous System.* By J. HUGHLINGS JACKSON, M.D., F.R.C.P., Physician to the London Hospital, and to the Hospital for the Epileptic and Paralysed.

I wish here to give as briefly as possible an account of the pathology of the nervous symptoms which result from syphilis. Of necessity there is considerable recapitulation from former papers I have written. For syphilis produces very different affections of the nervous system, and I have therefore had to speak of syphilis when considering Amaurosis, Epileptiform seizures, Hemiplegia, &c. It is, however, justifiable to bring together the conclusions one has arrived at about syphilitic nervous affections from the study of nervous affections in general.

A great deal of work has now been done, both in this country and abroad, on syphilitic diseases of the nervous system, and recently there have appeared the masterly lectures by Broadbent, and the most valuable book by Buzzard on these affections. It is a very difficult task to write on such a subject after these able physicians. I shall, therefore, limit myself. I wish simply to consider syphilitic nervous affections as I have seen them myself; thus my task is considerably narrowed.\*

\* Of syphilitic disease of the spinal cord, however, I do not wish to say anything, because I have not yet seen a single case as proved post mortem. There are very few cases of this kind with post mortem examinations on record; there ought, therefore, to be more hesitation than there is in ascribing paraplegia to syphilis.

My main object is to show that most syphilitic affections of the nervous system are very indirectly of nervous origin, and therefore that such names as Syphilitic Hemiplegia, Syphilitic Epilepsy, Syphilitic Insanity, although convenient for use in purely empirical arrangements for direct utilitarian purposes, are not scientifically accurate. They are analogous to terms used by the gardener, not to terms used by the botanist. If used in scientific statements, as I suppose for lack of others they will be, great confusion must result if we let the names be other than mere conventional labels. Just as confusion would result if the gardener's convenient terms (fruit trees, flowers, vegetables, and shrubs) were used in what purported to be a scientific account of plants. The pathological processes leading to the nervous symptoms mentioned as being syphilitic are really complex. Moreover, the conditions of nervous organs, which are the *direct* causes of the several nervous symptoms, are very different. The matter is not simple as the simple nomenclature implies. The terms mentioned are sometimes used as if they embodied clear pathological accounts; those who so use them evidently *do not even know that they do not know* the pathology of the cases of which they speak so easily.

I do really think, however, that empirical arrangements of cases of nervous disease by their most prominent features, or by signs guiding to utilitarian procedures are justifiable. Nay, I think that for practical purposes clinical entities are essential. I have much changed my opinions on this matter since reading an able paper by Moxon on Classification of Disease (Guy's Hospital Rep. Vol. xv.) Of some morbid states we have not enough knowledge to make a *scientific* classification—dyspepsia, for example. Let me give an illustration of the value of the empirical arrangement in cases of disease of the nervous system. Contrary to what I used to believe, I believe now that it is desirable for preliminary diagnosis to arrange cases of epilepsy and epileptiform convulsion according to what is the most striking feature in the cases. But scientifically the classification of epilepsies should, I think, depend on the principle that any part of the cerebral cortex may become unstable, and may discharge. For practical purposes, however, for diagnosis, for example, we must have an arrangement of cases from their most striking features, *e. g.*, into epileptic vertigo, epilepsy proper, &c. A patient comes to us for certain *symptoms*, for vertigo we will suppose; we have first to consider it as vertigo simply, in order

to find out whether it be epileptic, ocular, auditory, &c. Similarly for insanity; an empirical arrangement is, I submit, necessary for diagnosis and treatment. We should have Syphilitic Insanity, Phthisical Insanity, and the like. For obviously the most important thing for direct utilitarian purposes is the pathology and the causation. But the misfortune is that such arrangements may be taken for classifications properly so-called. They are really only provisional groupings for mere convenience. Because it is convenient to consider a whale as a fish for legal purposes, it would never do to consider it so in zoology. The only *scientific* basis for a genuine classification of insanity, that is, one analogous to the botanist's classification, is, I submit, the principle of Dissolution, the word dissolution being here used as the opposite of Evolution. For besides more direct reasons, this principle applies to most varieties of disease of the brain—to aphasia, hemiplegia, epileptic mania, and insanity ordinarily so called. But then this classification, valuable as a means of extending our knowledge, would be useless, or of little use, for *direct* practical purposes. For these we must have a nomenclature and an arrangement analogous to that of the gardener.

Whilst showing that the pathological processes by which syphilis causes nervous symptoms are usually complex and indirect, I shall show also that in these respects they simply imitate non-syphilitic morbid processes. I make this remark chiefly because I wish to give a reason for speaking in what follows more generally of nervous symptoms than the title *syphilitic* affections seems to warrant. Thus, what I shall call the Second Variety of Hemiplegia from Syphilis (that due to thrombosis of a syphilitic artery) does not differ from hemiplegia, owing to thrombosis of an atheromatous artery. Again, a syphilitic tumour in the brain acts like any other kind of tumour; and thus it would be most misleading to speak of the symptoms of it without regard to the fact that a glioma, an abscess, or an hydatid cyst, produce the same symptoms. The principle applies to every nervous symptom which syphilis produces. There is nothing in any kind of nervous symptom which enables us to diagnose syphilitic disease of the nervous system; our diagnosis is founded on associations and successions of symptoms; that is, of course, apart from obvious signs of external syphilis, which indeed make the diagnosis for us.

*On the way in which Syphilis "attacks" the Nervous System.*

I must premise that I know nothing of syphilitic diseases of the nervous system, except in the sense of there being disease beginning in the connective tissue of nervous organs or their arteries. I know nothing of syphilitic changes beginning in nervous tissue. It is true that in some manifestly the subjects of constitutional syphilis, who have died after having had nervous symptoms, I have found no changes in the nervous system of any kind post mortem. Of these cases, I believe it possible that syphilitic material has been absorbed. At any rate, we are not justified in drawing positive conclusions of any kind from cases in which nothing is found, especially as the cases in question are few and exceptional.

As a matter of fact, all that we really *know* of the pathology of syphilitic nervous cases is that in their earliest stage there is disease of the connective tissue of nervous organs or their arteries. It is only an inference that syphilis produces some minute change of nervous tissue enough to cause nervous symptoms and death, but not coarse enough to be discoverable post mortem. I do not deny that this may happen, but I confess I do not see the evidence for it. All we can demonstrate of the doings of syphilis in producing nervous symptoms is that it first leads to changes in connective tissue. This being so, it is plain at once that all we know of the pathology of the whole group of syphilitic nervous affections is that they are primarily *non-nervous*. Here is a particularly valuable illustration of a wide general truth of great importance. It is evident that almost all so-called *nervous diseases* of which the pathology is known are primarily of non-nervous origin, that is to say, the pathological change in the nervous organ begins in a non-nervous constituent of that organ, the lesion of the true nervous elements being secondary. In other words, the nervous tissue is not *in fault*, it *suffers* because its companion tissues have become diseased.\*

But there is more than this. We have to point out that the action of syphilis in producing the more important nervous symptoms is not, in most instances, direct even in the sense that the over-growth of connective tissue it causes

\* It is for this reason that I have urged that we should make a distinction betwixt the physiology (abnormal, of course) and the pathology of a case of nervous disease. There are the two (abnormal) physiological conditions of nervous tissue (loss of function and over function). The pathological processes beginning in non-nervous tissues of nervous organs, by which the loss of Function or the over-Function result, require separate investigation.

directly damages nervous tissue. It is convenient, however, to speak of these cases as owing to the direct action of syphilis. A syphilitic neuroma is an example of direct damage by syphilis in this limited sense of the word direct. For the over-growing connective tissue constituent of the nerve trunk then and there squeezes the nerve fibres it lies among. But we shall see that other nervous symptoms are produced by syphilis in a far more indirect way. Hence I would say again that such expressions as "Syphilitic Epilepsy," "Syphilitic Insanity," are not precise enough for use in scientific statements. He who has justifiably concluded that a patient's nervous symptoms are "caused by syphilis," has not come to a conclusion on which he can rest; he is in most cases only at the starting point of a pathological inquiry. We will consider the several affections seriatim.

### *Palsies of Cranial Nerves.*

The pathogenesis of Syphilitic palsies of cranial nerves is too simple to need much comment here. It is squeezing of nerve fibres by over growths of the connective tissue element of the nerve trunk. There, are, however, one or two clinical matters involved indirectly to be mentioned categorically.

*Smell.*—Subjective sensations of smell are occasionally met with in nervous patients, and they may occur in patients who have other nervous symptoms from syphilis. They may be mistaken for smells arising from disease of the bones of the nose, especially as in some cases there is a slight nasal discharge. The discharge, however, is not offensive to other people, and thus is no evidence of local organic disease in the tissues of the nose. The smells which these patients have are analogous to the coloured vision of some amaurotic patients.

*Sight.*—Amaurosis occurring with other symptoms attributable to syphilitic disease of the brain may be put down, as a matter of course, to syphilitic changes in the deep tissues of the eyes, choroido-retinitis, by those who do not use the ophthalmoscope. This is a very grave error. It is true that amaurosis, in such cases, *may be* due to syphilitic changes localised in the *fundus oculi*, but as a mere matter of fact, it scarcely ever is. It is nearly always owing to optic neuritis or to atrophy, the sequel of that neuritis. Now, "optic neuritis from syphilis" is not "syphilitic optic neuritis." The optic neuritis produced by a syphilitic tumour is just like

that produced by a glioma, or by any other adventitious product in the cerebrum or cerebellum.

I know of no evidence to prove that optic neuritis is produced either by syphilitic disease actually involving the optic nerve trunks inside the cranium or by syphilitic meningitis at the base.\* I speak of post-mortem evidence; clinical evidence is not sufficient.

I never saw a neuroma of the optic nerve. I do not remember seeing simple atrophy of the optic nerve (atrophy not the sequel of neuritis) in a patient who had other nervous symptoms inferentially due to syphilis, to say nothing of never seeing post-mortem evidence of intracranial syphilis in such a case. The other kind of optic atrophy† is often seen.

Here it is important to remark that amaurosis from syphilitic choroido-retinitis is really a syphilitic disease of the nervous system, quite as much so as a syphilitic neuroma is. There is syphilitic disease of connective tissue of a nervous organ, the nervous elements suffering secondarily. He who speaks of amaurosis from optic neuritis due to syphilitic gumma in the cerebrum, and amaurosis owing to syphilitic choroido-retinitis, as if they were alike, calling them "Syphilitic Amaurosis," without qualification, is not speaking scientifically. It would be like speaking of a whale and a salmon as being zoologically alike.

*Paralysis of Ocular Motor Nerves and Vertigo.*—Paralysis of an ocular motor nerve is a cause of vertigo. Now, the vertigo may be the symptom which the patient has first of all; that is, he has vertigo before there is actual double vision, or obvious strabismus. It would be a great blunder to say of such a case in a patient the subject of syphilis, "In this case the vertigo was the first symptom of the syphilitic disease of the brain, and then palsy of the sixth or third nerves occurred." In reality the vertigo would, in all probability, be owing to paresis of an ocular muscle, before actual demonstrable palsy of it occurred.

\* I know nothing of syphilitic meningitis. Need I say that I except cases of meningitis from bone disease, the result of syphilis.

† I may here remark that I only know of one kind of change in the optic nerves from intracranial tumour, syphilitic or other, and this I call optic neuritis. There are all degrees of this change, from a climax of great swelling with hæmorrhages to white atrophy. I do not recognise a swollen or choked disc, from raised intracranial pressure. There is a swelling of the disc in some cases of tubercular meningitis and pyæmia. The swelling is, I believe, from venous thrombosis; but I have had no demonstration of it.

The vertigo\* continues, of course, when the palsy is established.

Anyway it would be very misleading to call vertigo, so caused in a syphilitic patient, "syphilitic vertigo," for all syphilis does, in such a case, is to damage a nerve bundle, and vertigo would attend paralysis of an ocular motor nerve, however caused. It is an error easy to fall into. If the motor nerve affected be the fourth, the ocular palsy is not obvious, and may be overlooked. And when there is evident paralysis of the third nerve, the vertigo resulting from it may be erroneously put down as a symptom independent of that palsy, and due to implication of a nerve centre. But be it remarked that the expression "Syphilitic Vertigo" is just as warrantable as is the expression "Syphilitic Epilepsy." The expression sounds more grotesque, simply because it is novel.

*The Ear.*—Syphilis may produce disease of the auditory nerve, as it may of any other cranial nerve trunk. This needs no comment. Syphilis may produce disease of the tympanum, just as it may produce iritis and choroiditis. Having done this there may arise (as from common tympanic disease after scarlet fever) paralysis of the face from implication of the portio dura nerve in the Aquæductus Fallopii. To say that this facial paralysis is "caused by syphilis" would be a most unmethodical statement. It would be as erroneous scientifically as the expression "Syphilitic pyæmia" would be for pyæmia arising from disease of the bone, because that bone disease was syphilitic, or as "Syphilitic Vertigo," for the vertigo from syphilitic paralysis of a motor ocular nerve. It would be an assertion too grossly misleading to be made by any careful clinician. I give the illustration because it shews well the indirect way in which syphilis can produce even a very local one-sided paralysis.

*Menière's Disease.*—Syphilitic ear-disease may produce severe nervous symptoms which may be erroneously put down to the direct action of syphilis on the nerve centres. The syphilitic ear-disease may cause attacks of vertigo with reeling and vomiting (Menière's disease). It would be very unmethodical to say that these symptoms were "caused by syphilis," for that expression might be taken as implying that syphilis had direct action upon the nervous centres in producing the vertigo. If a patient had from disease of the

\* It is not due to diplopia, as is commonly supposed, but to erroneous estimation of position of objects by the one eye which is lamed.

nervous *centres* an attack so violent as are many attacks of auditory vertigo, he would be very dangerously ill. A careful clinical observer would at once suspect the far less serious thing, ear disease, if a patient had an attack of severe vertigo, deep pallor, reeling and vomiting without loss of consciousness. The fact is that in such a case syphilis has damaged the ear, and then as a next and completely independent step, ear-disease (exactly as similar disease caused by any other pathological process might do, or as syringing the ear in some people does) produces attacks of Menière's disease.

*Aphonia from Syphilitic Disease of the eighth nerve.*—Disease of the eighth nerve produces (among other symptoms, doubtless) paresis of the palate and paralysis of the vocal cord; the presumption is, that the part of the eighth nerve affected, corresponding to these palsies, is the bulbar part of the spinal accessory. From the laryngeal palsy there is of course aphonia. I have seen several cases (proved post mortem) in which syphilis caused aphonia, by attacking the eighth nerve within the cranium. In all these cases, the palsy was demonstrated during life by the laryngoscope, thanks to my colleague Dr. Morell Mackenzie; the larynx, except for atrophy of the paralysed muscle, was structurally healthy. In a man whose body presented obtrusive signs of syphilis, it would be an easy fallacy to suppose that his aphonia was owing to syphilitic disease of the tissues of the larynx itself. I have several times written on this variety of "Syphilitic Aphonia." The misleading nature of such a term is obvious. It is as bad scientifically as the expression "Syphilitic Strabismus" would be, but quite as good as some other expressions I speak of in this paper.

#### *Acute Cerebral Disease from Syphilis.*

As before remarked, I know nothing of syphilitic meningitis. I do not speak of meningitis from syphilitic disease of the cranial wall; this is really bone-meningitis, and has nothing to do with our enquiry. Syphilis, however, will produce a set of symptoms which I am sometimes unable to distinguish from those of meningitis. But when I say I know nothing of syphilitic meningitis, I speak of post-mortem examinations. What I have found after death in these meningitis-like cases is not meningitis, but a syphilitic mass, a veritable tumour, with some softening of brain near it.

There is, I suppose, a local encephalitis produced by irritation, the tumour acting as a foreign body. The acute illness I speak of is producible by a glioma, by an abscess, or by local coarse disease in the brain of any kind. It, in its symptoms, may be like meningitis, tubercular, or traumatic. Indeed, I use the general and gardener-like term "Acute Cerebral Disease" as Trousseau did the term "Cerebral Fever," because there is a set of symptoms which occur from severe acute disturbance of brain by the very different processes stated. The symptoms are, headache, vomiting, irregular pulse (often slow), constipation, retracted belly, emaciation, altered temperature (often low, normal, or little under; never very high). These are what may be called general nervous symptoms; they may be complicated with special nervous symptoms, as for example, convulsion, hemiplegia, &c.

If the patient recovers from this acute condition, with or without iodide of potassium, one is not justified in ascribing the symptoms to a meningitis of any kind. In cases of recovery, on which, after some subsequent fatal illness, I have had autopsies, I have found in syphilitic subjects old syphilitic disease, but not traces of past meningitis. I believe that patients do occasionally recover from meningitis, because I have found traces of it post mortem in a few cases. But of recovery from syphilitic meningitis I have no evidence. It is not relevant to speak of syphilitic patients who had "all the symptoms of meningitis," for there are no symptoms characteristic of meningitis only. Such symptoms, I repeat, occur in cases of local gross cerebral disease, without meningitis. I believe that meningitis is supposed to have existed in these cases of recovery simply *because the patients have recovered*. It is assumed, that if there were tumour, the illness must have proved fatal. The reply to this is, that patients do recover from severe illnesses with symptoms like tubercular meningitis, but really owing to tumour, glioma for example; autopsies prove this in those cases where the patients die of some later illness under our care.

With glioma, syphiloma, and other foreign bodies, the symptoms are usually much more spread out, more chronic, than in tubercular or traumatic meningitis, but occasionally one cannot tell whether a patient's Acute Cerebral Disease is meningitis or tumour. If there be optic neuritis, tumour or other adventitious product is very probable; that diagnosis is practically certain, if the neuritis existed before the

illness became acute; then there would be a step towards the diagnosis of syphilitic tumour. But only a step, for the positive diagnosis of syphilitic disease, even in such a case is only to be made either (1) by the presence of outward signs of syphilis (here the diagnosis is really made for us); or (2) by there being, or by there having been, local nervous symptoms in disorderly association or succession, of such kind as palsies of cranial nerves, slowly coming on paroxysms of convulsions, &c.

Of course there are mental symptoms in cases of Acute Cerebral Affections from syphilitic disease of the Brain. They are not prominent features. In the first place, they are usually Negative. There is indeed a hebetude, a slow evenly-dull indifferent state of mind which is almost characteristic of cerebral tumour, but not of syphilitic tumour in particular. Syphilis rarely produces a striking degree of Positive mental symptoms, I mean such symptoms as delusions, illusions, grotesque actions, &c. But this remark applies to all kinds of gross local organic disease of the brain, and to all varieties of meningitis. Of course I am speaking of that I see in general Physician's practice. In the wards of a hospital, positive mental symptoms usually occur in patients who have non-nervous ailments; they occur acutely, as in erysipelas, pneumonia, rheumatic fever, and more chronically as in phthisis and other debilitating illnesses. They do occur in meningitis, but are not the most prominent features; they are so far from being characteristic of meningitis, that they are of very little value in diagnosis. Whilst mental symptoms attending any sort of disease, of necessity imply disorder of the brain, they do not necessarily, and not even in most cases of acute disease, point to *primary* changes there. I repeat, that the striking symptoms of primary disease of the brain are not usually mental, as superficial considerations would lead us to expect, but disorder of circulation, respiration, and temperature, vomiting, headache, &c. The reader will bear in mind that I still speak of cases seen in general Physician's practice. Were I told that one of my patients in the London Hospital was delirious, I should think it most probable that he had no primary disease of the brain, but that he had some such illness as pneumonia; but if I were told that a patient had a pulse of 60, that each beat was quick and shotty, that the pulse-rate was not intermittent, but now a little faster and now a little slower, without any evident regularity in these

irregularities, I should feel pretty confident that he had severe primary disease inside his head.\*

There are no symptoms, "mental" or "physical" which are *characteristic* of Acute Cerebral Disease from Syphilis.

*Convulsions from Syphilis (Epilepsy and Epileptiform Seizures).*

I speak of chronic cases.—In most cases, the convulsions or epileptiform seizures which syphilis causes begin locally by a very definite "aura," and mostly in the hand or side of face. In my practice of general medicine I find it so. Convulsion from syphilitic brain disease may, however, simulate those convulsions with loss of consciousness which are often called "genuine epilepsy." For my present purpose, it suffices to hold that syphilis does produce convulsion of any sort whatever. I will describe the only way in which I know it to produce convulsions. We shall see that syphilis acts very indirectly in producing this nervous symptom. There is first a growth of connective tissue (a gumma) on the brain's surface. But, convulsion being a nervous symptom, we must speak of the condition of the nervous element of which it is symptomatic. We have only spoken of an overgrowth of a subordinate element. It is plain that a convulsion is the result of an excessive discharge of grey matter. Evidently the gumma (an overgrowth of connective tissue) cannot discharge. Now whether, as I think, the grey matter near the gumma is that which morbidly discharges, or whether the discharge be of grey matter in the medulla oblongata, as most physicians suppose, what is quite certain is, that the convulsion is produced because the syphilitic disease, the gumma, induces changes in grey matter somewhere. I call these changes in grey matter changes of instability; they constitute a locally abnormal physiological condition of grey matter. What the minute links of the pathological process betwixt the gumma and those changes are we do not know. From another point of view, these changes constitute what I call a "discharging lesion." Whatever their nature may be, or wherever they may be, there is a certainty that they are changes *secondary* to the syphilitic disease; they are not syphilitic, but the indirect

\* From facts of this kind I have long been driven to the conclusion that the units of the cerebral hemisphere represent, not only the large muscles of the body, but the heart, viscera, &c. It seems to me, that this is a conclusion one must reach *à priori*, if we take careful note of emotional manifestations.

results of a syphilitic mass. It is on this secondarily induced change in grey matter that the occasional discharge producing the convulsion directly depends. The clear demonstration that the instability of grey matter is not itself a syphilitic change, is, that convulsions are producible by any other sort of tumour, glioma for example, of the convolutions. A syphilitic mass is indeed only one of the foreign bodies which can produce changes of instability. A gliomatous tumour in the region of the corpus striatum may produce just the same kind of convulsion, with or without loss of consciousness, as a syphilitic tumour in that region may do. Should we be using scientific language if we said there was "gliomatous epilepsy?" The syphilis in these cases acts indirectly, just as it does in producing optic neuritis. We often indeed find optic neuritis and convulsion together, from local syphilitic disease of the brain. In such cases, there is a gradual formation of a syphilitic mass in the brain; the mass being formed, next acts, not in its special character as a syphilitic mass, but in its general character as a "foreign body." It, just like any other foreign body, produces changes in the optic nerves on which defect of sight depends; it produces changes of instability in grey matter on which convulsion depends. We shall have more to say of convulsion when we consider the third variety of syphilitic hemiplegia.

### *Softening of the Brain from Syphilis.*

Of universal or widespread softening of the brain I know nothing. I have not seen such a thing post mortem, except of course as the result of decomposition. The cases popularly called "softening" are cases of nervous exhaustion or cerebral atrophy. All I know of "softening" is of softening locally. The pathological processes causing local softening (excluding injuries, direct effects of meningitis, and the like obvious cause) are 1, adventitious products, and 2, blocking of arteries or veins. The adventitious product may be a syphilitic growth; the softening it causes is about the growth. I believe it is a later and more extreme degree of that change by which the symptoms, Convulsions and Acute Cerebral Disease from tumour, are caused (see those sections), that is to say a late stage of encephalitis. [For "syphilitic softening" from blocking of cerebral arteries, see remarks on second variety of Syphilitic Hemiplegia and on Aphasia.]

*Hemiplegia.*

There are three varieties of Hemiplegia from syphilis; hence, it follows, that the term "syphilitic hemiplegia," being a name for three different things, cannot be a precise expression. To speak of "curing cases of syphilitic hemiplegia" is to speak carelessly.

*First variety of Syphilitic Hemiplegia.*—A gumma grows in the motor tract itself, then and there it slowly squeezes nerve tissue, and in this way causes paralysis straightway. The process of causation here is obvious. This variety of syphilitic hemiplegia is very rare indeed. The paralysis comes on slowly.

*Second variety of Syphilitic Hemiplegia.*—(Local softening of the brain.)—Hemiplegia comes on because the middle cerebral artery (or some branch of it), being gummatous, becomes blocked up; there is local softening of the parts which the vessel should supply, from thrombosis of it. This is the simplest illustration which can be given, of the very indirect way in which syphilis can cause a nervous symptom. For plainly the hemiplegia here depends directly on local *Softening*, which is a change quite as non-syphilitic as if the artery blocked had been blocked by an embolus, or as if there were thrombosis, because the artery was atheromatous. Indeed in the latter case, the term "atheromatous hemiplegia" would be as justifiable as "syphilitic hemiplegia," and for certain practical purposes, and for empirical arrangements, it might be useful.

In these cases, anti-syphilitic treatment can do no more good than it will do for softening from embolism; in fact drugs would do no good at all. But, unfortunately, there is often a misunderstanding about the influence of remedies in such cases. For instance, it may be replied "however indirect the pathological process may be, anti-syphilitic treatment *does cure* a patient of syphilitic hemiplegia." It is really no answer. In the first place, by the statement that iodide of potassium does no good for the kind of syphilitic hemiplegia we are considering, I do not mean to say that the patient may not get rid of his paralysis whilst he is taking that drug. Next, I deny that there is any evidence that the patient is cured by it. It is not sufficiently known that if the damage to the motor tract which causes hemiplegia be limited, the patient will get well without

drugs, and this is so, whatever the nature of the damage may be—clot, or softening however caused. The statement one occasionally hears (1) that a patient cannot recover from paralysis when part of a motor centre is permanently wanting, and (2) the statement that prompt and complete recovery shews that there “could not be” a destructive lesion, are simply not true. From not knowing that recovery is spontaneous in many cases of hemiplegia from local damage, erroneous conclusions are come to on therapeutics; the patient may get well of this variety of syphilitic hemiplegia, but our drugs do not cure him.

*Third variety of Syphilitic Hemiplegia (Hemiplegia after a Convulsion).*—There is hemiplegia, almost invariably transitory, after a convulsion. This form of hemiplegia (the epileptic hemiplegia of Dr. Todd) is so very indirectly owing to syphilis that the convenience, even for utilitarian purposes, of the expression “Syphilitic Hemiplegia” is very dubious indeed. Syphilis is one of the commonest causes of this variety of hemiplegia. The causation is, however, we shall see, very indirect.

We find post mortem in such cases a gumma in the membranes growing into the convolutions. What happened, I suppose, was that the gumma was first formed. Secondly (as explained under the head of Convulsion), the gumma, as a “foreign body,” causes localised instability of grey matter—causes a “discharging lesion.” The gumma is syphilitic, but the “discharging lesion” is not, for a similar one is producible by a glioma. Thirdly, the convulsion is a result of a strong discharge of the locally unstable grey matter. Now for the fourth step, which brings us to the symptom spoken of. In some cases the patient is paralysed after the convulsion, that is, when the cerebral discharge is over. According to the degree of the discharge he may be weak of one side or perfectly hemiplegic, even with lateral deviation of the eyes. If, however, the convulsion has been local, the subsequent palsy will be only of the parts first and most convulsed. The paralysis is, I think, *a consequence of the discharge*—an after effect of a very excessive discharge. The fact that it is in the parts first and most convulsed, that it occurs often in cases where there is no loss nor trouble even of respiration to imply cerebral congestion or extravasation, and that it is transitory, render the inference warrantable, that the paralysis directly depends on exhaustion of nerve fibres in the

corpus striatum,\* which “carried” the violent current in the convulsion. I venture on the generalisation *that excessive nervous discharges temporarily paralyse the nervous region in which they begin and through which they spread*. The importance of this generalisation is in the application of the explanation of epileptic hemiplegia to mania after epileptic paroxysms. We now see that this variety of “Syphilitic Hemiplegia” is a very indirect result of syphilitic disease of the brain. To recapitulate. The order of events is (1) Formation of an overgrowth of connective tissue; (2) Induction of changes of instability in neighbouring grey matter; (3) Occasionally excessive discharge of that grey matter; (4) Temporary exhaustion of nerve fibres in the corpus striatum representing the parts paralysed.

Supposing, however, that my speculation is incorrect, and supposing that the usually accepted† speculation is correct, viz., that the paralysis after convulsion is due to congestion, or to extravasation of blood, or to both occurring in the paroxysm. The fact, even then, is that the paralysis is very indirectly owing to syphilis, for neither the extravasation nor the congestion are syphilitic changes.

Apart from all kinds of speculation the facts are that there is permanently a gumma in the vertex, only occasional convulsion and only paralysis when the convulsion is over, and that paralysis is temporary. Such cases are not at all uncommon.

In cases of this variety of hemiplegia there may be errors as to the effects of drugs. It must never be forgotten that hemiplegia, after a convulsion, due to organic disease of the brain's surface, such as syphilitic gumma or glioma, is nearly always transitory. Unless there be a repetition of the convulsion, the hemiplegia will pass off in a few hours or days, sometimes leaving the side affected a little weak, although not obviously paralysed. So then if the patient took drugs an inexperienced person might suppose that he cured his patient of “Syphilitic Hemiplegia.” There are cases in which *absolute* paralysis after a convulsion will pass

\* I used to say (Study of Convulsions, St. Andrew's Transactions, 1870) “of the nerve fibres which pass from the part discharged to the muscles convulsed.”

† Really this cannot possibly be the explanation, because there will occur after convulsion absolute, and yet transitory, paralysis of a part, of the arm for example, when there has been no trace of affection of consciousness, and not the least embarrassment of respiration in any part of the convulsion. Moreover, the convulsion has affected most the parts paralysed, a “coincidence” not explainable on the theory here disputed.

off in a few hours. The most careless man would not suppose that iodide of potassium or mercury had caused so rapid a disappearance.

### *Syphilitic Aphasia.*

What has been said of varieties of Syphilitic Hemiplegia applies *mutatis mutandis* to three varieties of Syphilitic Aphasia. It is to be noted, however, that so far as I know, neither syphilitic nor any other kind of tumour ever causes any considerable defect of speech. It never, I believe, causes entire loss of speech, as softening and clot often do. Of course one finds aphasia from softening due to thrombosis of a syphilitic (left) middle cerebral artery; we find it with the second variety of syphilitic hemiplegia. Epileptic Aphasia, analogous to Epileptic Hemiplegia, is not very uncommon in syphilis. The term Syphilitic Aphasia, like Traumatic Aphasia, may be useful as part of a gardener-like arrangement of cases, but it has an odd sound.

### *Mental Symptoms from Syphilis (Syphilitic Insanity).*

That sufficiently extensive destruction of the cerebrum by any process may produce a degree of the negative mental condition, imbecility, is obvious. And, of course, syphilitic tumours may be the destroying agents directly by squeezing, or by leading to softening; or syphilis may more indirectly cause local softening by leading to arterial changes permitting thrombosis. We have already seen that syphilis leads to the negative mental condition of aphasia. However, it is not the custom to consider aphasia as a mental symptom, although really the person who has lost speech has lost a most special part of his mind. I believe, also, that syphilitic disease leads (as do other morbid processes) to another negative mental symptom as special as aphasia (imperception).

We have spoken of negative mental symptoms (hebetude, &c.), from tumours, syphilitic or other. But not only are there negative mental symptoms, there are positive mental symptoms, *e. g.* illusions, delusions, hallucinations, ravings, and grotesque actions. It is very important to keep distinct these two kinds of symptoms, negative and positive, for they are not only utterly different, as *symptoms*, which is obvious, but utterly different in their pathogeny. It is of the positive symptoms that I wish to speak most. Now, so far from the positive class of mental symptoms being the *direct* result of syphilis, they are never, I think,

the *direct* result of any morbid process whatever. It is to me incredible, that any morbid process can be the direct cause of even such caricatures of healthy mentation\* as delusions, illusions, &c., are. On the contrary, the negative symptoms are always, in cases of insanity depending on disease beginning in the brain, due directly to morbid changes. Hence the statement "utterly different in their pathogeny," is not too strong a one. If this is so, I ought, were this the place and were there space at my disposal, to consider insanity much more widely than its production by syphilis demands, even in order to show how syphilis itself acts; I must, however, be content with barely stating the most general principles involved. It is in a general review of the causes of insanity, that the Principle of Dissolution, adverted to at the beginning of this paper, comes in. There is also another, the Principle of Loss of Control. Insanity is Dissolution beginning in the very highest centres. We have now to consider how the positive symptoms result.

I adopt the teaching of Monro, that there is in Insanity both a negative and a positive element; the principle stated by Anstie, that the apparent exaltation of certain faculties in disease is owing to removal of controlling influences. The same principle was independently stated by the late Thompson Dickson. (I do not follow Dr. Dickson, however, in his application of the principle to the epileptic or epileptiform paroxysm.) The Principle of Loss of Control, taken with the Principle of Dissolution, seems to me to apply to all cases of Insanity, and evidently to epileptic mania. Let us state them together, in order to show the relation of the Negative and Positive Symptoms.

Dissolution beginning in the highest centres "causes directly" the Negative Symptoms of Insanity, but it only "permits" the Positive Symptoms by removing control from those centres next to the highest.

I must not pursue this subject further. I refer the reader for evidence in support of the doctrine, to chapters on "Epilepsy—Medical Press and Circular," December 9th, 1874. The following quotation from that chapter may serve to show in outline what my opinions† on the Classification of Insanity are:—

\* As to peculiarities of insanity, in such cases as those called Phthisical Insanity, I must say that I see no other explanation than that these peculiarities arise, not from the particular morbid process, but from the inherited or acquired temperament of the patients who become insane.

† I have stated that such a classification is not intended for direct utilitarian purposes; for these we must have empirical arrangements.

Cases of insanity should, I think, be classified and investigated on the basis supplied by the doctrine of Evolution of nervous centres. We shall have enormous help in the work Spencer has done in his "Psychology." We have already explained that we use the term Dissolution as the opposite of Evolution. Insanity is Dissolution beginning in the highest nervous processes. The highest processes form the anatomical substrata of consciousness. In insanity there is partial or total loss of use of the highest processes, the symptom being loss or "defect" of consciousness. Metaphorically speaking, the disease is of the controlling processes. These are negative statements. There is, stated from the positive side, reduction to a more automatic condition of mind, or, physiologically stated, a "lowering of adjustment." (See Chapter II., Part 2, Oct. 21, page 350.) The elements of the duplex condition, dissolution and automatic action, are in inverse proportion. The "shallower" the dissolution, the higher and more special (more nearly normal) is the automatic mental action permitted; the deeper the dissolution, the more general is the automatic action. *The ravings, grotesque actions, visual and auditory hallucinations, &c., are due to action of centres which, except for over-excitement from loss of control, are healthy.*

#### *Epileptic Mania from Syphilis.*

Mania follows those epileptic paroxysms in which there is loss of consciousness at the onset of, or very early in, the paroxysm. This is equivalent, I consider, to the statement that it follows in cases where the discharge begins in the very highest nervous centres. That syphilis produces paroxysms of this kind (commonly called genuine or true epilepsy) is certain, although it more commonly produces paroxysms in which loss of consciousness is a late event in the paroxysms.\*

I do not remember, however, as coming under my own care any case of mania after a paroxysm of epilepsy (*petit mal* or *grand mal*) in a patient whose body presented conclusive evidence of syphilis. I have seen no autopsy in such a case. In all cases of epileptic mania, I should, however, apply the generalization reached when an explanation was given of epileptic hemiplegia. There is, I consider, after the discharge beginning in the highest nervous centres, a temporary exhaustion of them, just as there is of the corpus striatum in epileptic hemiplegia. The raving is, as I suggested in the last

\* I would here urge again that the absolute distinction of epilepsies into cases in which consciousness is lost, and cases in which it is not lost, is not a distinction of either anatomical or physiological parentage. It is probably due to the common metaphysical habit of mind, which considers consciousness to be an entity. The distinction, even empirically, is into cases in which consciousness is lost, first of all, early or late, in the paroxysms.

section, the result of action of lower nervous centres, which are left temporarily uncontrolled as a consequence of temporary exhaustion of the highest or controlling centres. There is a duplex condition—(1) loss of consciousness, and (2) greatly increased automatic action.

Epileptic mania is acute temporary insanity; but there is a corresponding duplex condition in insanity ordinarily so-called; there is, negatively, defect of consciousness and positively slightly increased automatic action (delusions, illusions, &c.) In no case can syphilis be the *direct* cause of positive mental symptoms.

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*The Morbid Psychology of Criminals.* By DAVID NICOLSON, M.B., &c., Medical Officer, Her Majesty's Convict Prison, Portsmouth.

(Concluded from page 31, vol. xxi.)

### III.—STATES OF MENTAL EXALTATION.

1. *Emotional Exaltation.*
2. *Delusional Exaltation.*

“ Look to the needle of your compass, I beseech you, good Sir Astrophel, and tell us, if you can, whence comes this storm ?”

We now come to the consideration of the last of the three forms of weakmindedness among prisoners. viz., states of mental exaltation. We looked upon the first form, simple mental weakness, as a state of “ want of mind,” a negative or irresponsive condition of mind. The second form, states of mental depression, we took as a condition in which there is general *inertia* of mind with a prominent activity (positive action) in the direction of painful depression.

In the third form, which we are now taking up, the mind may be said to be characterised by want of balance, with a predominating activity (positive action) in the direction of exaltation. These general and prevailing features of distinction are placed side by side simply with the view of facilitating the study of the three forms in their relation to one another. It will not be understood that any attempt is made so to define them as that one form will be exclusive of the other. Although the instances are numerous in which these general definitions, or points of contrast, are perfectly distinctive, it is not pretended that this distinctiveness is by

any means universal. I do not require of myself such strict accuracy of definition as would ensure complete exclusiveness; seeing that the latter would, in point of fact, be incorrect, and out of accordance with practical experience, whereby it is found that more than one form may be present in the history of the same case.

Taken generally, states of mental exaltation indicate the presence of an undue preponderance, in the way of excitement, of certain inferior and usually subordinate faculties of the mind—resulting in more or less violent gesticulatory movements of the body. These movements are the fundamental evidence of the disturbed condition of mind (of whatever degree) of which they are the outcome or product. They correspond with that “derangement of the motory side of the soul-life,” which, according to Griesinger, characterises maniacal states. The same author shows\* that the centre point of mania lies in the “tendency to an exaggerated psychical movement from within outwards, in an augmented energy and more extended range of the efforts, and in an extravagance of the will;” and we may safely take it that the same constitution, in a lesser degree, holds good with regard to states of mental exaltation which fall short of actual mania. At all events it is from these anomalous outward manifestations, taken in connection with certain external circumstances, or with some possible exciting cause, whether external or not, that we have to form an estimate regarding the extent of mental weakness or defect. The muscular commotion, whereby the mental excitation reveals itself, sometimes involves all the organs of movement; the intensity of the downward impulse being as it were generalised or diffused throughout the body. In this case the whole body is the seat of a seemingly aimless, convulsive movement; but the free extremities and the tongue are especially active. On the other hand, the muscular response to the internal emotion may be restricted to the limited area of definite, purposive action, as when a direct assault is made by one man upon another. The downward impulse in this case has all the advantage which centralization and more continuous intensity give it. Thus, a prisoner who is unable to “smother his feelings” of hate, rancour and vengeance, may primarily intend an assault upon his warder; but having just enough of the prudential element left in him, he abandons his original intention, and discreetly avoids committing

\* “On Mental Diseases,” p. 273.

himself in an evidently uneven contest, or in an action which would involve him in serious consequences. But the sequence of thought and action does not usually end here; the generated impulse must be expended; and he “vents his spleen” in such general and violent gesticulations and epithets as serve best to relieve the convulsive feelings within him, the emotional current being diffused through a wider and more harmless sphere of muscular activity.

But what is the mode of origin of the mental exaltation which gives birth and character to this physical agitation? It is twofold.

When speaking of criminal idiosyncrasy (Journal for July, 1873), I pointed out the groundwork upon which the more marked psychoses of prisoners rest, and under the terms emotional display, and simple perverted ideation, I went into the *rationale* of the special and anomalous behaviour to which they give rise.

I endeavoured to show the relations existing between strong emotional conditions and certain inefficient or faulty states of reflection and volition; and I traced up the tendency to “fixation” of ideas, and to the *growth* of delusion more or less morbid in imprisoned criminals, a class of individuals of undoubted mental inferiority, and with a range of ideas greatly restricted by ignorance and present circumstances. It will not, therefore, I trust, be necessary for me to go over the same ground again. It is from these two primary peculiarities of temperament and mental constitution that the morbid “States of Exaltation” in prisoners take their origin, and those states are, therefore, of two kinds, viz., emotional, and delusional.

1.—The mental excitement or exaltation, whatever its mode of outward expression, may be simply of an *emotional* character, and set going by some ordinary, or at last *real* transaction in which the individual has been engaged. Here the exaltation or emotional state arises in the ordinary or normal way, from an immediate contact with external circumstances—much in the same direct way as an inferior animal would respond to irritation and annoyance from without. The ideational or reasoning faculties are not involved in the disturbance.

2.—The mental exaltation and its consequences may be the response to some fanciful idea or to a delusion (speaking of special prison-delusions) arising in the mind of the individual himself, no real external transaction being necessary.

The centres of ideation are in this case the seat of disturbance. Although no outward occurrence is necessary as an exciting cause, yet, if any such does take place, its significance and relationship have been misconceived, and the ensuing fanciful or delusive ideas regarding it give rise to the emotional condition. In emotional exaltation there is an immediate response to some *vis à fronte*, some external circumstance. In delusional exaltation the immediate response is to some *vis à tergo*, some erroneous or delusive idea which may or may not be connected with an external circumstance.

Just as emotional display and simple perverted ideation are the most prominent of the mental peculiarities of criminals in prison, so are emotional exaltation and delusional exaltation the most frequent and prominent peculiarities among prisoners who require special treatment as being weakminded.

I have repeatedly pointed out the great extravagance of conduct, the violence, the destructiveness, and the utter heedlessness of propriety which are the outward manifestations during periods of mental excitement in prisoners. And there can be no doubt that, in a great many cases, prisoners who indulge in this line of conduct must be held as being for the time "out of themselves," as being beyond their own control, and therefore as being more or less deficient in that power of moral self-governance which most minds, with even less than average balance, are capable of exerting. The late Mr. Bruce Thomson, of Perth prison, alludes to this extravagant conduct in the following terms:—"To be without any distinct purpose guilty of violence such as described—to destroy cell furniture, smash dishes, assault officers, and the like, shews weakmindedness, self-control being entirely wanting. . . . The name of prison-mania has been very properly applied to such stupid, motiveless misconduct." But while I admit the general applicability of this remark, yet I feel that we should be guarded against putting the *whole* of such conduct down to morbid weakmindedness peculiar to prisoners. Although often apparently "motiveless," and perhaps "without any distinct purpose," still misconduct of the sort is, in a certain number of cases, capable of explanation on natural grounds. Let us not forget that the imprisoned criminal is nevertheless human. Let us not be too exacting in regard of a high morality and sweetness of temper, under circumstances of restraint and

discipline, and even sometimes of positive annoyance and aggravation, such as few of us would "put up with." If a prisoner's temper gets the better of him when quarrelling with his warder, and if he is led on by his passion to strike, the mere sequence of mental and physical phenomena is nothing more than might be witnessed between any two men; as when one private individual takes upon himself to "chastise" or "horsewhip" another. If the same occurrence takes place between a private soldier and his sergeant, disciplinary considerations alter the aspect of the case, and the soldier's conduct has to be judged on the code of official morality, *i.e.*, by military law.

As between man and man there may have been in each of the three cases the same amount of irritation and aggravation leading up to the retaliating blow; but how greatly do circumstances modify our general conception of the bearings of the case! The blow struck during anger or excitement by the private individual, we may find excuse for, or even approve; in the case of the soldier we instinctively feel that he deserves punishment as having committed a grave offence against discipline, while with a prisoner we are very apt to look upon the act as evidence of a dangerous and absolutely vicious or morbid turn of mind; he is the dog with the "bad name," and he is treated accordingly.

Our convict prisons contain men, and women too, of the most dangerous and heartless class, and to me it has always seemed a great wonder that such restless and untamed spirits can be massed together under the strictest rule and discipline without more frequent displays of insubordination, irritation and violence. Disturbances and misdemeanours of any gravity are limited to a certain few who form but a small proportion of the criminal community in prison; even if some of the most desperate among them wish to make a violent assault, it is found that they are capable of exercising that control over themselves which motives of prudence suggest, and hence their moral inability is not so complete as might be supposed. Instead of making a personal assault, their violent feelings and propensities may find vent in the lesser evils of destruction of property and personal and filthy abuse.

However unreasonable the violent, emotional, and perverse behaviour of some criminals may seem, there is, in a considerable number of cases, a certain compensatory gratification at the bottom of it all; just as the spoilt child, when thwarted, shows itself to be silly, pettish, and destruc-

tive. And it will be worth while to inquire how far this gratification can be looked upon as natural, and not purely morbid. With the prisoner there is such a mixture of ill-temper, spitefulness, resentment and riotous exultation on account of some occurrence that the behaviour cannot always be taken as due to any irresponsible form of dementation, for often times, knowing better, he wilfully gives way. When in this violent mood, I grant that, in a certain sense, we may fairly say that the prisoner is mentally "not himself," but, given certain circumstances of provocation, it requires an amount of moral strength which even non-criminals are not always blessed with, to subdue the uprising angry passions, and to preserve an unexcited demeanour. Strange how closely this very moral strength, this power of enduring annoyances unmoved, is allied to moral cowardice, that milksop condition which fails to resent gratuitous insult and injury, and which "puts up" with any amount of provocation! It is well known what an amount of self-imposed inconvenience and torture prisoners whose mental condition demands neither question nor treatment will go through in the hope of gaining some (to them) good or desirable end, such as the avoidance of work or special treatment in hospital or asylum. Whether, on a somewhat sudden impulse, he wilfully puts his hand under the wheel of a waggon and necessitates amputation, or whether he resorts to the more chronic production of long continued ulcers and wounds, he acts with his eyes open and *for a purpose*; and if he effects his end he is satisfied, although at an expense of physical suffering which not many would have the nerve to endure. In the same way may he give rein to his passion and violence, and submit himself to all the inconveniences which ensue. He knows what the result will be; he does not do all this blindly, but *for a purpose*: the purpose, namely, of self-gratification. In his insubordinate, defiant, and uproarious conduct he is, for the time being, not a prisoner. What are prison rules to him? He is above authority; he over-rules it, and reverses its decrees. Temporarily, he is master of the situation, and *does what he likes*.\* Does he like to shout and sing and blaspheme; to

\* And so, it may be said, does the lunatic. Yes! but the sanity of the prisoner lies in his adhering to *disorderly* conduct with as much consistency as could possibly be given to *orderly* conduct. He has but a Hobson's choice, order or disorder. The latter is what he at present wills, desires or *likes*, and he is able to carry it out by reason of his conscious knowledge of the former. In fact, his knowledge of what is right enables him to do what is wrong; under the circumstances it even directs and guides his conduct.

curse the governor and every official in the place? Does he like to smash his cell furnishings and windows? Does he like to tear all his clothes, to lie naked, cold, and stubborn on the floor, or to smear his body with excrement, and have a warder to wash it off? Is such conduct against prison rule, or against all rule? then he likes it; and he does what his fellow prisoners do not do, he does what he likes. A sorry and brief triumph it may be, but he has the gratification of feeling that he has succeeded in effecting it. It will be said, and with truth, that to go through such a set of experiences, as is involved in this line of conduct, is of itself evidence of a defect somewhere, mental or moral; although, be it remembered, the adoption of self-punitory alternatives is no uncommon practice in every day social life—as where the adult exclaims “I’d rather go without it altogether,” and does go without it when he finds he cannot get at some legitimate and hitherto longed for pleasure just after his own fashion. But with criminals it is unnecessary for me to repeat we are not to expect a mental and moral tone free from defect any more than we are to look for perfection in humanity under any circumstances. The question is, rather, what amount of defect is a criminal to possess before he is to be characterised and treated as a weakminded criminal? Or, again, what additional or further amount of defect is required to constitute him an insane criminal? These are points which are especially raised in our minds in connection with states of exaltation; but only the former concerns us at present.

Whatever his intellectual calibre, no stringent code of morals is applicable to the case of what may be termed the criminal proper. For instance, a criminal does not lose caste or get relegated to the ranks of insanity if he uses language highly unparliamentary, or because he forgets, or omits to maintain, the distinction between *meum* and *tuum*; nor, again, is he overtaken by these consequences if he exhibits a weakness for throttling old gentlemen, or kicking his wife’s ribs. These are the criminal’s professional “points,” notwithstanding that they, at the same time, indicate some infirmity in his notions of social morality.

Now, the amount of *moral* depravity or incompetence, which we assign to any criminal group in prison, will, I believe, if traced back, be found to have come to them by way of inheritance, or else, and especially, in the course of actual vicious contamination or training in early life, or it

may be by a concurrence of both sources. At all events, as a mental property, whether inherited or acquired, they *bring it with them* into prison; it is not primarily an outcome of the experiences of prison life. Exaggerated though they often are by writers with fertile imagination, the *coarse* associations of prison life afford considerable scope for the play of debasing influences and corrupt tendencies, in spite of all efforts to the contrary. This cannot be denied; but, on the other hand, it is most unlikely that a man coming into prison with a fair intelligence and sense of propriety and decency of behaviour, will fall away into a condition of utter or even noticeable moral worthlessness; granting that he comes in contact with, if he does not even learn, a good deal that is gross and offensive.

Again, it so happens that a great number of the worst criminals make very good prisoners. These men, whether the extent of their criminality lies in the frequency, or in the gravity of their crimes, are not only able to avoid difficulties while in prison, but they also earn by their industry and good conduct the greatest amount of remission of sentence and all the available privileges. In these cases they are able to lay former experiences to heart, and by an effort they can, in their own language, "go on straight." Some of the best behaved convicts now in this prison, I have known during former convictions to be most troublesome and violent. There would appear to be something fortuitous about the behaviour of these men; for if they happen to come under a firm and sensible officer on the public works at the outset, and if they once get into the groove of doing well, I believe they try to continue in it; but if they begin to go wrong and forfeit privileges, there is a risk that they become indifferent, and careless, and troublesome. Another point which goes to show that these occasional outbursts or emotional explosions are wilful, lies in the fact that they are sometimes resorted to merely for the sake of companionship. The "separate" or punishment cells of prisons are every now and again the scene of pandemonial orgies in which the exulting "brotherhood" shout their noisy chorus and pæan of "freedom." There is a sort of reaction from the pent-up longings of their nature, and their conduct, although insubordinate, defiant, and sometimes insolent and vicious, is often characterised by a good deal of clumsy, reckless humour, for they care not what they say, and they sing for hours on end a medley of airs, now national or pathetic, now comic, vulgar, or ribald. Thus, by

way of change from their monotonous servitude, they spend a few days quite heedless of all around, free, and unrestrained by rules of discipline. They take their "bread and water" with wonderful grace, but the high exuberance of spirits does not last long, and they are glad in the end to return quietly to their work. Such obstreperous gatherings, which are quite as common among the women as among the men in prison, may be looked upon as in some measure due to a morbid sympathy existing between minds, and having a sort of endemic influence. Yet it would be unwise to treat cases of the sort as being illustrations of "moral imbecility" and irresponsibility, and as demanding a suspension or a relaxation of prison discipline on that account. Such prisoners know perfectly well what they are about; they are "having their fling," whatever the consequences, and no matter what theorists may say, the most advisable and useful mode of management is to treat these men with what measure of punishment they seem to deserve in individual instances. I have thought it right to make these remarks, because those who have not had actual experience of prisoners are at a loss to explain conduct which seems so much at variance (as in the outer world it would be) with any of the promptings of sanity. It is ever to be remembered that in the case of criminals in prison we are dealing with beings whose standard of mental and moral "health" must be taken as having a lower downward range than ordinary, and that the severe discipline and rigid lines of penal servitude afford little or no scope for the play of individual temperaments, especially if they are restive and turbulent. It is impossible for any one to understand or estimate rightly the noisy behaviour of some prisoners, unless they take into consideration the existence of this unavoidable "tyranny of (criminal) organization" in the presence of a necessary rigidity of (prison) circumstance. But both theory and practice must agree in assigning a limit somewhere to what may be termed natural play even of this organization. And while we would have it understood that the noisy and vicious emotional conduct of which we have been speaking is sometimes explainable as not unnatural, we think it of even greater importance to be able to recognise, at as early a stage as possible, those *morbid* conditions which are likely to be influential in its causation.

"When it is said that a man's character is completely formed, we express thereby the fact that he has acquired

certain definite combinations and associations of ideas, which, firmly organised, henceforth avail him in the different relations of life. It is evident, then, that if we had a complete knowledge of the inner nature of the individual, if we could penetrate that most exquisitely organised fabric of thought which by reason of his peculiar life experience has been grafted on the original capabilities, it would be possible to fortell with certainty his mode of thought and conduct under any given circumstances—a prediction which, as it is, those who know a man best often fail not to make, with close approximation to truth.”\*

The combination and association of ideas consequent on the life-experience of those social rebels who have earned for themselves the name of “habitual criminals,” must assuredly exert some special influence on their ultimate or “formed” character, as compared with that of the non-criminal portion of the community; and a knowledge of this fact teaches us that while it is one thing to compare imprisoned criminals with non-criminals outside, the estimation of the psychological value of certain conduct in different sets of prisoners must be proceeded with on other and somewhat special tests. To take an example. The legitimate idea of a moral *insanity*—the idea of a man *becoming altered* in his social relationships by a disease of his moral nature—is one that will rarely if ever find support in prison experience. And why? In the first place, the habitual criminal whose moral defection is in question in all probability never reached any reasonably complete stage of moral *sanity*; and, secondly, prison life does not afford scope for that revulsion of social and domestic feeling which marks the new phase of character and conduct in him who has *become* a moral lunatic. The prisoner may be, if you like, a moral imbecile, but it is not to prison that we would go to look for that moral insanity which is found in the outer world, and which tells us that an individual, in his states of feeling and self-respect, has *become alienated* from states which may be said to have characterised his normal self. And the converse holds good also. The idea of an original moral *imbecility*, such as we might see in the case of some prisoners, becomes impracticable in its application to individuals who have attained any degree of social *cultus* or respectability. It is, therefore, a necessity of the case, that, in searching for an explanation of prison misconduct

\* Maudsley—“Physiology and Pathology of the Mind,” p. 124.

from the mental side (for our guidance in its treatment), we keep it in view that we are comparing imprisoned criminals *inter se*, and upon a standard of mental health which is not identical with that of the free population. And in this inquiry we are constantly beset with the difficulty that presented itself in the case of Don Juan, when—

“ Inez called some druggists and physicians,  
And tried to prove her loving lord was *mad*;  
But as he had some lucid intermissions,  
She next decided he was only *bad*.”

I have endeavoured to show how a *responsible* mental exaltation may be engendered in criminals by external circumstances, or by some natural peculiarity of temperament; and I now go on to point out some considerations affecting those states of exaltation which are the product of a morbid degree of mental, and especially of moral, inability. To this morbidity (among prisoners) a certain degree of *irresponsibility* attaches; but the extent of the irresponsibility is no more a fixed quantity than is the extent of the moral perversion, and in this respect each case in which morbid exaltation is detected must be dealt with on its own merits.

“The feelings,” says Dr. Maudsley, “mirror the real nature of the individual; it is from their depths that the impulses of action spring; the function of the intellect being to guide and control. Consequently when there is perversion of the affective life, there will be morbid feeling and morbid action; the patient’s whole manner of feeling, the mode of his affection by events, is unnatural, the springs of his action are disordered, and the intellect is unable to check or control the morbid manifestations, just as when there is disease of the spinal cord, there may be convulsive movement, of which there is consciousness, but which the will cannot restrain.”

Hoffbauer, quoted in Bucknill and Tuke’s “Psychological Medicine,” speaks in the same strain. “It is clear,” he says, “that mania may exist uncomplicated with mental delusion. It is, in fact, only a kind of moral exaltation (*tollheit*) a state in which the reason has lost its empire over the passions, and the actions by which they are manifested, to such a degree that the individual can neither repress the former nor abstain from the latter. It does not follow that he may not be in possession of his senses, and even of his

usual intelligence, since in order to resist the impulse of passions, it is not sufficient that the reason should impart its counsels, he must have the power to obey them."

And, again, of states of exaltation where there is no delusion (*mania sine delirio*), Griesinger thus writes—"In a court of law the morbid nature of these states is most easily demonstrated in cases where the disorder has come on *within a short time*, or returns at intervals, and therefore admits of comparison with the state of health in the same individual; also in cases where there are concomitant nervous or other bodily symptoms. It is, on the contrary, difficult to prove that a certain state is morbid when it has been slow and gradual in its development, when it has become habitual and passed into a fixed peculiarity of character. It should constantly be borne in mind that an individual may talk 'quite rationally,' and at the same time show by his acts and by his conduct (and even by what he does not do) that he is mentally deranged."

These authoritative opinions serve well to describe briefly the relations of thought, feeling, and action in marked cases of the peculiar morbid exaltation among criminals which merits the designation of prison mania.

In prison mania it may be said that while there is decided insanity of conduct (*folie d'action*, of Brierre de Boismont), it cannot be called the conduct of decided insanity (*i.e.*, it cannot always be shown to be anything but the outcome of mere vice *in a criminal*). We recognise in it a sort of gesture-madness, or emotional chorea, wherein the movements, having been once started under a special impulse, are carried on until the current of nerve energy becomes gradually expended.

What are the directions in which we seek for evidence of a morbid origin in states of mental exaltation in prisoners? They are mainly these—the previous history, the general state of the intellect, the nature of the signs, the exciting cause or immediate circumstances, the frequency and persistency of the attacks of excitement, and the presence of any physical signs.

1.—*The previous history*, whether before or since his imprisonment, tells us of the nature of the prisoner's crime, and whether he is an accidental criminal or an old offender—and what his previous habits and mode of life were—also as to any history of insanity in himself or family. These and other preliminary matters of information are useful.

2.—*The general state of his intellect.*—Prisoners with serious general moral deficiency commonly exhibit great ignorance, and marked deficiency in the perceptive and reflective faculties; and the dulness and stolidity which the combination produces are more the characteristic of the *original* habit of mind than the product of disease coming on later in life. At any rate, the presence of this low and dull state of intellect is to be looked upon in cases of excitement as supporting the prisoner's claims for medical interference on the ground of weakmindedness. It is to be taken as presumptive evidence (even in criminals) of morbidity. And it is always satisfactory to have actual evidence such as this, as hasty interference in cases otherwise doubtful is not beneficial on disciplinary grounds. But in the other set of cases where, with an intellect not deficient, the want of mental balance is due to preponderating strength of the lower emotions and passions, there is a greater difficulty in finding grounds for interference by a study of the prisoner's mind. We have then to attach more weight to the surrounding circumstances of the case.

3.—*The Nature of the Signs of Excitement.*—The signs of excitement as exhibited in the conduct refer especially to matters of discipline and order, or to the personal considerations as to comfort, convenience, &c., on the part of the prisoner.

The prisoner who is acting from viciousness or ill-temper usually sets all discipline and propriety at naught for the time; and he is quite indifferent about himself and his treatment. But in a well-established case of weakmindedness the prisoner generally takes up one or two ideas which are incompatible with discipline. Very likely he distinctly and flatly refuses to do any regular work, but with the exception perhaps of some mumbling to himself and occasional threats of violence, he dresses himself and otherwise conducts himself with general propriety. There is no distinct following out of this line of conduct in all cases; but the partial or the complete nature of the signs occurs sufficiently often to be borne in mind.

Sometimes all the disturbance arises from the prisoner's determination not to work under some particular officer; and it is wonderful how far prisoners will be carried by such a determination as this. The prison-maniac is flighty, and the immediate cause of excitement is apt to vary from time to time. He may go on quietly for a time and even make him-

self useful—but he cannot be trusted very long. He quarrels with his fellow prisoners, and soon makes a show of violence. But even those who are decidedly weakminded are actuated by motives either to worse behaviour than usual (in the hope of attaining some object), or else to a temporary improvement in their conduct—and hence they are not to be held as altogether void of self-control—when they have a purpose to be suited.

4.—*The Exciting Cause: or the immediate circumstances leading up to Excitement.*—When this can be made out, it forms important evidence. In proportion as the provocation or other external cause for excitement is slight, so is the evidence of mental disturbance or want of balance strengthened. For if a prisoner has a cumulative quarrel with his warder, and ends by giving way to violence prolonged into a continuous state of excitement, from disappointment and vexation, we can trace up a natural sequence of feeling and action. But if the same line of conduct is indulged in without any such provocative stimulus, or upon trivial grounds, it is clear that there is something wrong in the prisoner's habit of mind, that he is preternaturally emotional or passionate, or that his mind is acted upon by impressions which are fanciful or morbid; or, again, if the immediate circumstances are the same in repeated outbreaks, we have indications either that there is something wrong in the treatment the prisoner is receiving, or else that some prison-delusion is growing up in his mind—showing, if the latter, that the case is one of delusional exaltation in which there is a fanciful grievance, or where the complaint of ill-treatment, &c., is not borne out by fact.

5.—The probability that the case is one of morbid exaltation is usually in the direct ratio to the *frequency and persistency* of the attacks, and these are, therefore, important elements in our consideration of individual cases.

The cases are exceptional in which a lazy or bad prisoner will be taken under care as weakminded for the first few outbursts of temper and violence, especially as these are generally of short duration and more or less amenable to punishment. But when various punishments have been tried, and the prisoner yet often recurs to his noisy and demonstrative conduct, becoming more and more determined in it each time, this very frequency and durability are evidence at least of the futility and uselessness of punishment, and therefore of a stamp of mind which is unusually unimpressionable to

sharp measures. It is at this point that a discreet change of treatment is of wondrous effect—a change from the heroic to the sedative. Let the prisoner be calmly reasoned with, and let the stupidity and physically destructive nature of his conduct be pointed out, and let him understand that if he promises to amend, “something will be done for him,” and every opportunity given him to behave well for the future. The prisoner, in a large number of instances, will understand this, and accept the terms. I have known many to keep good faith in this way, who would otherwise have gone on until they were really physically reduced and mentally upset.

6.—*Physical Signs of Derangement.*—Almost the only conditions in which physical signs accompany states of exaltation are where we have general bodily depression and exhaustion from over-work or from over-punishment. The whole system is worn out, and the nervous derangement is evident, while the prisoner himself is “carried away” as it were by exalted ideas, becoming voluble and excited. There is some amount of fever or flushing with white and clammy tongue and redness about the eyes, with throbbing soft pulse. I have at present under my care a prisoner convalescent from an attack of this sort. He was a well-behaved and hard-working prisoner, who became bodily weak, and was in the course of a night (for there had been no previous evidence) suddenly taken with excitement. He became talkative and went on unceasingly, describing the charge of poaching and manslaughter brought against him, and declaring his innocence, and the provision the Almighty Father was making for him. I am convinced that if he had not been taken into hospital for rest and nourishment at the very outset, he would speedily have advanced into a violent, if not dangerous, state of exaltation.

But although physical signs are valuable as positive indications, they form rare accompaniments in the moral disturbance of ordinary prison-mania.

These helps in the matter of diagnosis are chiefly of value when taken altogether: for with the anomalous exhibitions of character and temper met with in prison, it seldom happens that we can trust one set of signs as diagnostic of morbid mental or moral disturbance.

The *age* of the prisoner and the *stage of imprisonment* are in some cases useful guides. When a prisoner has passed his 35th year, the older he becomes the more likely are any signs of mental irritability or weakness to be morbid in character.

Under 35 it is that we have those violent and impetuous displays which betoken unbridled passions and an ill-fashioned will; and which, although mostly of the nature of an ill-tempered and destructive emotional force, wittingly yielded to, yet sometimes compel us, from their extravagance, to accord them modified treatment as morbid phenomena. Again, mental irritability and excitement shown by hitherto well-behaved prisoners towards the end of their imprisonment may with much safety be credited with dependence upon actually disordered faculties.

The practical application of these considerations brings us face to face with different sets or groups in a prison community. By constantly having to come to some decision regarding the punishability, the responsibility, and the general mental condition of individuals, we come to recognize various positions of character and circumstance which map out—in however broad and arbitrary a way—those groups.

They may be briefly indicated as follows :—

1.—The prisoner who is merely a casual or accidental criminal gives no trouble, as a rule, by breaking out into states of excitement, temper, or violence. When he does so the signs may generally be accepted as due to insanity, or actual derangement, in some degree. There are, of course, exceptional cases where insanity is *feigned*, even by men of general respectability of conduct.

2.—The more advanced criminal, possessing a fair intelligence and a certain amount of shrewdness and judgment, may at times be provoked (or he may worry himself) into demonstrativeness, through irascibility of temper or by a peevishness and irritability of disposition. This man, as a criminal, must be credited with full responsibility, and not allowed to escape punishment for his conduct. Owing to the discomfort to which it gives rise, this spiteful and witting indulgence in vicious actions, is generally in the end found to be its own cure, especially if assisted by a little salutary punishment.

3.—Coming to a still more advanced criminal, one who is criminal-minded, we encounter a poverty of intellect and a general shallowness of mind which prevent us looking for any well-regulated exercise of moral competence. Where the intelligence is not so obscured, there is, in criminals so morally defective, a lack of wholesome co-ordination between the instinctive and emotional faculties on the one hand and

the higher regulative faculties of the mind on the other. Even where we may not be able to detect special derangement either of the moral or intellectual faculties in themselves, there is found to be a want of power of adjustment or a want of homologous action between the two. In cases such as these we cannot exact the full standard of responsibility in action; and yet the character of the demonstrative or violent behaviour is so little removed from that of ordinary outbreaks of ill-temper and viciousness, that we are not in a position to assert complete irresponsibility. So that, while on the one hand we are compelled to make allowances which correspondingly reduce the extent of individual responsibility and punishability, we have not, on the other, sufficient grounds to warrant exoneration on the plea of irresponsibility. We have, therefore (especially in relation to contingent punishment), to fall back upon *degrees* of responsibility: and to recognise a *partial responsibility* and a *partial irresponsibility* according as we have degrees of mental health and derangement. It is obvious, says Dr. Bucknill,\* “that to be *founded in justice*, the punishment of any offender, of whose perfect sanity a doubt can exist, must have reference to very partial states of mental disease, and that such conditions must be allowed to modify responsibility *quantum valeant*.” It is the due recognition of these partial states which establishes the existence among criminals in prison of a morbid weak-mindedness short of actual insanity. The weak-mindedness in some of its three forms characterises a class of prisoners who are to be held but partially responsible for their anomalous conduct, and who consequently necessitate, in their case, the relaxation or suspension of ordinary prison discipline.

4.—But if we have to acknowledge a partial responsibility owing to mere mental defect, still more must we be prepared to recognise some amount of irresponsibility in those cases where prisoners show a tendency to positive misconceptions, false notions and ideas, growing up into (prison) delusion such as I have repeatedly referred to. Indeed, in such cases we need never hesitate in interfering, and extending a protective influence; especially when the conduct is the evident and immediate outcome of this ideational obliquity—as in Delusional Exaltation.

5.—There is the further stage of positive insanity with its irresponsibility.

\* “Unsoundness of Mind in Relation to Criminal Acts,” p. 22.

6.—Finally, there is a sort of hybrid condition from which we cannot escape in an investigation into psychological states in prisoners—I mean *Feigned Insanity*—where we have certain external appearances and manifestations which are more or less like those of insanity, but which are nothing but the promptings of a sane mind behind the scenes. In all that I have said on the *morbid* psychology of criminals, I have purposely avoided complicating the subject by taking up those *false* appearances which are presented to us in the simulation of mental disease. These latter I have in some measure dealt with in this journal already.\* In our work among prisoners, we have ever to be on our guard lest, on the one side, deception is being practised upon us; and lest, on the other, we be carried away, in our mistrust, to a hasty treatment of real manifestations as being false and due to imposture.

I now proceed to give a few cases in illustration of States of Mental Exaltation—in addition to those given in the Journal for January, 1875—in connection with the subject of prison misconduct in relation to weak conditions of mind (cases of F. L., C. W., J. R., W. W., &c.). The outward signs present much of a sameness throughout. The same insubordinate and defiant spirit, the same turbulent, violent, and intractable behaviour, and the same noisy quarrelsomeness and disregard of propriety are present more or less abundantly in all. In some the outbursts follow each other in such rapid succession as to be almost continuous; in others they are only occasional, and after intervals of quietness and general good behaviour. Very frequently this conduct is unexplainable; when, as in some cases, the prisoners maintain from day to day a restiveness and excitability which involves themselves and other prisoners in fights and brawls, when in partial association. And yet there is something of method in it, there is often an unpleasant feeling in those observing such men that they are consciously outraging decency, and could behave much better if sufficient motive were supplied. A great proportion of these characters indulge in this sort of noisy and obstreperous conduct *only in prison*, when it suits their purpose, whatever that may be. One would not be so much surprised at it, if they were kept at the spur of discipline and hard at heavy labouring work; but they continue it even when ordinary discipline is suspended, and when they are doing no work. Although

\* “Feigned Insanity, with Cases.”—Journal of Mental Science, Jan., 1870.

they cannot be said to be impostors, they are not insensible to the influence of motives :—

J. G., aged 24, was sentenced to five years' penal servitude for assault and robbery. A miner; and had been convicted three times previously for theft. I first met the prisoner at Portland, where he behaved well enough. From Portland he went to Dartmoor, and a few months after he got there he became troublesome and frequently under punishment, and ultimately he had to be removed as being of weak mind. On looking at his "reports" an evident progressive increase in the gravity and number of his misdemeanours is traceable. Beginning with "talking in his cell," they go on through an upward series of "refusing to work," "going to the infirmary unnecessarily," "laughing and shouting," "insolence and disobedience," "throwing his food about his cell," "striking and wounding fellow prisoners," "insolence to priest," "abusive to officers and threatening them." Upon his removal to Woking as weakminded the stage of destructiveness and violence came on, and the following are one or two of his endless reports:—"Violent conduct when at exercise, throwing his bread and spoon at his officer's head, and his salt cellar at the nurse." "Destroying two blankets, one rug, one jacket, one urinal; also breaking the bell-handle of his cell, and further for resisting his officer and attempting to push him out of his cell." And, six days later, "Destroying one pair of breeches, one vest, and four dinner tins, also making his cell in a filthy mess," having smeared himself and his cell with *fæces*. Finally, "striking his officer with his cell stool," "general bad and filthy conduct, and uttering obscene language to the Deputy-Governor." Everything was tried with the prisoner to encourage him to improvement; but punishment and kindness were alike useless. He would promise to amend and make great protestations, but was soon as bad as ever. At Millbank, where he was sent for prolonged observation, the medical officer, Dr. Gover, did not feel justified in certifying him to be insane. There was no incoherence; but he was full of grievances and complaints of the officers and his treatment. An abject wretch whom no influence could reach, and whose disgusting conduct was most tantalizing, and about the most intractable criminal I ever came across. He was discharged on expiry of his sentence from Millbank in 1873, having become more tractable during the past few months of his prison career. But he is sure soon to find his way back; he is sure to quarrel with and assault some one.

J. D., æt. 29, a thief, with several previous convictions, during some of which his conduct had been very bad. While I was Assistant Medical Officer at Millbank, my attention was drawn to this prisoner by the officer of his ward, who said he often heard him muttering and talking loudly in his cell. After some continued observation it was found that he was in the way of gradually getting up an argument

with himself and working himself into a passion, in which he became very voluble and demonstrative. He had very flighty ideas about his parents, apostrophizing his father and mother alternately as all that was good and all that was bad. Later on the warder-attendant reports that this prisoner is very frequently under the impression "that other men are threatening him, and he will come to threaten and challenge them." His general conduct is well expressed in this officer's somewhat quaint language—"Very talkative and fightable." Given to masturbation.

The mind of this prisoner is not only constantly at work within itself, and mostly in a certain groove; but there is, as it were, an unconscious discharge of its successive operations through the channel of articulate speech.

J. H., 28 years of age, under sentence of 10 years, for larceny. Known to me during a former conviction for horse-stealing, as being insubordinate and troublesome. He was received at Portsmouth prison in the end of 1873, and continued to behave quietly for several months. First got into trouble by shouting and blaspheming in chapel during the morning service. This is a most unusual offence, and he afterwards repeated it; although his general behaviour was not amiss, I looked upon it as a somewhat morbid symptom. He next proceeded to threaten and assault the officers, and became absolutely dangerous, as when at work he handled heavy tools and attempted to strike a warder with a "grafting shovel." For this he was flogged; but during the infliction of the punishment he was quite callous, and shouted out in the most disgusting and abusive language all the time. The flogging made no impression upon him, nor did all the "bread and water" he got. He was quite coherent in his ideas, but had a certain careless and reckless manner about him. Hoping to do some good with him, I spoke to the Governor for him, and got him employed in a comparatively easy party, in which he promised to work and behave himself; but it was of no avail. He returned to his mischievous conduct. While on the works he made another threatening attempt on a warder who was quite a stranger to him. I took him under special observation, and was compelled to recommend his removal on mental grounds, as not being "amenable to the discipline of a public works prison." Not only was his defiant example bad, but he became a source of anxiety to the officers on account of his sullen and savage disposition. I do not think he always meant to assault when he openly threatened, but he was never to be trusted, as he was quite capable of remorselessly inflicting murderous injuries if the "mood" had taken him. There were no external signs of mental defect or aberration, and his features were interesting rather than repulsive.

L. M., æt. 28, was sentenced to five years' penal servitude for setting fire to a stack of wheat. Became subject to fits of irregular

and violent conduct. Restive and quarrelsome with his fellow prisoners, giving constant trouble. Occasionally has delusions that his food is poisoned, and that he is being "dosed." A case of general exaltation with prison-delusion. The warder-attendant reports him as being under the impression that no man is able to fight him, and that he has as much sense as five or six men, whence he has given to himself the name of Solomon.

J. T., aged 32, has several aliases, and is undergoing 10 years' penal servitude for theft after previous conviction. Has led a criminal life for more than 20 years, and, in the words of the Governor of Durham Gaol, he is "as bad a man as can be." Lazy, refuses all work, insolent, defiant, striking other prisoners and aggravating them, using foul and abusive language. However bad his mental organization may be, he doubtless affects the fool at times by an appearance of rambling, and repeating the same jabbering statements over and over again. If he is asked a question he often repeats the whole or part of it before he makes any reply. Full of cunning and maliciousness, as many of these low-minded criminals are. Had been to Broadmoor Asylum, but the general impression was that he was more knave (and blackguard) than fool. I believe him to be a thorough scoundrel, who would put up with anything rather than work; and if he hates work, who is to blame him if he *prefers* to eat and sleep, and make disturbances and get up fights? It suits his purpose, and he attains it, for it is impossible by any means to bring a man to follow the discipline of the prison; it must ultimately be relaxed, and such modified treatment carried out as is found most expedient. J. T.'s weakmindedness becomes established from the fact that he will be neither driven nor led into any rectitude of conduct. Upon such lazy and mischievous dispositions, states of excitement seem to follow as almost natural consequents.

J. D., a prisoner of low, small, and inferior cast of head, and of correspondingly dull intellect, is an illustration of a violent nature being ever uppermost, not only in prison but in the outer throng. He was undergoing a 10 years' sentence for two charges of "feloniously wounding with intent to murder," and had been convicted before for "wounding." This man was repeatedly making false accusations against his officers, and upon several occasions he made violent assaults upon them. There was no doubt a veritable brutal instinct in this prisoner, such as could never be credited with full responsibility. His general manner was timid and cowering rather than bold or fierce, and this very contrast helped to show real morbid defect, as compared with the usual blustering and roughness of the convict who is brutish and criminal-minded.

I am indebted to Mr. Wilson, of Woking Invalid Prison, for notes of the following case, which shows natural viciousness, combined with feigned insanity, in a man who had been

on several occasions placed in asylums on certificate of lunacy.

R. R., a butcher, sentenced to seven years, for stealing a mare in July, 1870, after previous convictions for "attempting bestiality," and for "housebreaking." He was received at Millbank with the following account of his previous history. The Governor of Worcester Gaol says:—"R. R. was removed from this prison in 1866 to the County Asylum at Powick, from whence he escaped. After his conviction in 1869, he was removed to Fisherton Asylum, from whence he also made his escape. He was committed for trial at the Oxford Summer Assizes, 1870, charged with horse-stealing and violently assaulting the police; he was removed before trial to the Oxford County Lunatic Asylum, and again escaped. He was afterwards, in 1870, committed to Stafford Prison on six charges of felony, and was sent from there to the Stafford County Lunatic Asylum; from there he also escaped. On his being received into this prison, doubts were entertained as to his being insane, and he has been closely watched—the result was an entry in my journal for the information of the visitors of the prison, of which the following is a copy:—"I have carefully watched this man, R. R., since his committal, and I am of opinion that he is not insane. He is at all times perfectly coherent, and has no delusions that I can discover, and all his acts of violence and insubordination show premeditation and system. I think he is accountable for his conduct: he is wickedly disposed, and has a violent temper, and I believe he is deliberately taking advantage of his supposed insanity to escape his sentence and to set all authority at defiance." "Prisoner has twice been placed in irons for 48 hours, for attempted assaults on the officers, and as soon as he found that punishment followed his misconduct he became more tractable. So far as can be ascertained he has never shown any symptom of insanity while at large."

The medical officer, Dr. Hyde, gives the following certificate:—

R. R. has been very sullen, violent, and destructive since his trial. I am of opinion that he is of sound mind, and has wilfully misconducted himself, probably with the object of getting removed to a Lunatic Asylum, where he has been previously sent and escaped.

Dr. Bower, Medical Superintendent of the Stafford County Asylum, certifies as follows:—

I beg to state that R. R., who was admitted into this Asylum from the County Prison, Stafford, Nov. 28, 1870, and who escaped on Dec. 25th, never showed, whilst here, any signs of insanity. His case was considered by all persons who had charge of him to be one of feigned insanity.

At Millbank he was very sullen and morose, refusing to talk; and would not for a while eat his food. He tore up his clothes and was dirty in his habits. Although considered of a low order of intelligence, he was treated as being sane, and ultimately removed to Portland.

This illustrates well the reasoning or purposive side of many cases of mental exaltation. The difference here being that he was not only detected, but, for the time at least, overcome by pressure put upon him. The chances are that he will do no good in prison; that he will always be in trouble—until at last his stubborn determination may prevail and bring him among the weakminded.

The following case, which I quote from Mr. Bradley's report on Pentonville Prison for the year 1857, speaks for itself and describes excellently well nearly all the variety of conduct which mental exaltation, as a more or less morbid condition, gives rise to:—

The prisoner, W. G., aged 34, a labourer, from Westmoreland, was tried at Worcester on the 6th of March, 1854, and sentenced to four years' penal servitude for a burglary. He was first confined in the city of Worcester Gaol for about five months, and at his departure the Governor gave him a character to the following effect:—His conduct was most refractory; he twice attempted to break out of his cell; he smashed the windows; many times threatened the lives of the governor and surgeon; his ordinary language was too disgusting for repetition; and, in short, he was the "vilest brute" he ever had in custody during a governorship of 35 years. From Worcester the prisoner was sent to Millbank, where he remained but a few weeks, and was thence passed on to Pentonville. Here he was confined for upwards of a year, during the whole of which period his conduct was marked by insubordination. He disturbed the prison, attempted an escape, threatened the lives of the officers, and to carry out his threats devised several weapons of very ingenious construction. When the term of separate confinement had expired, he was removed to Portland, where, as may be learned from his papers, he was, on account of highly mutinous and insubordinate conduct, after about three months' detention, removed to Millbank Prison to be placed in the penal class. When he had been about five months in the last-named prison he committed a murderous assault upon a warder, for which offence he was sent to Newgate, tried at the Central Criminal Court, and sentenced to transportation for life. In pursuance of this sentence he was, on the 14th April, 1856, sent to Pentonville for the second time. On entering the prison, and while in the court-yard awaiting his formal reception, he threatened repeatedly that he would murder an officer before the expiration of his imprisonment. His subsequent conduct was very similar to what it was during his former imprison-

ment here. He opposed himself to the rules, and murmured at the dietary, which he asserted was insufficient to maintain his strength. Sometimes he pretended to be too weak to leave his bed, or that he was actually at the point of death; at other times he maintained that immediate death was preferable to completion of his sentence, and begged that he might be put to death. All this time his bodily health was good, and he retained his natural stoutness. The character originally given him by the Governor of Worcester Gaol was to a certain extent confirmed, for he appeared to be lazy and ill-conducted, morose, bloody-minded, and an impostor. His term of imprisonment in separation having expired, he would have been passed on to one of the public works prisons, but that the whole tenor of his prison life rendered it probable that insanity in a latent or unrecognised form was present, although neither incoherence nor delusion was evident. It was, therefore, considered advisable to recommend his removal to Dartmoor, where he would be under medical observation while his mental condition continued to be in an unsatisfactory state, and where the discipline would be better suited to his case than that of the public works. Before the necessary warrant, he one day preferred a request to be allowed some indulgences in addition to his diet, and when this was refused as unreasonable, he savagely attacked the medical officer and stabbed him with a weapon he had previously constructed for the purpose, which he had kept concealed in his coat-sleeve, wounding also two of the warders who came to the rescue. When spoken to shortly afterwards on the serious nature of his offence, he expressed no contrition; but, on the contrary, regretted that he had not killed the doctor, as he had intended, alleging that for some time past his food had been "powdered" or poisoned by the Medical Officer's orders. As this was manifestly an insane delusion, the prisoner was placed in the infirmary, where he was visited by an "expert" in insanity, Dr. Forbes Winslow, who pronounced him to be a proper subject for a Lunatic Asylum. In accordance with this view of the case, in which I fully concurred, the prisoner was, on the 9th of April, removed to Bethlem Hospital, whence, after a detention of somewhat less than five months, he was, on the 29th of August, sent back to Pentonville, with murderous threats in his mouth, lavishing abuse upon the establishment he had just left, and persisting in the story of the "powdered" food. His mental condition on re-admission was but little altered since I last saw him. As I was convinced, from long-continued observation of the case, that the prisoner was still the subject of mental affection, and unfit, therefore, for the discipline of the prison, he was recommended for removal to Dartmoor, whither he was sent on the 7th of September, accompanied by a brief statement, in order to put the authorities of that prison on their guard concerning him. From Dartmoor I am informed he has been removed on account of bad conduct to Millbank, where I believe he at present remains, and in the penal class.

The fact that he was returned from the Asylum to finish his sentence in prison as a criminal shows that the Asylum Authorities did not accept the case as being one of positive insanity, whatever impression they may have formed as to his being of a comparatively defective type of mind. The Medical Officer of the Prison, on the contrary, thinks it a case of "insanity with homicidal tendency," one of the worst forms, and in this opinion he had the support of Dr. Forbes Winslow.

At all events he was weakminded, with doubtless a large element of the criminal in him—a condition which is so often present in those who necessitate in their own cases a modified form of prison discipline. W. G. was "prisonmad."

In concluding these papers, I may remark that I have endeavoured to open out, and, in some measure, to classify, those psychical states which show themselves to be more or less prominent in, or peculiar to, criminals *in congregation* as social rebels and under prison rule. I have sought to keep in view, not only the mental characteristics of imprisoned criminals as a class and individually, but also the conditions and circumstances under which their peculiar mental operations come into play.

It will readily be understood that while prison life affords a certain uniformity of standard by which mental capacity, or perhaps rather, mental stability, may be gauged, it presents also certain features of an anomalous character for which allowance must be made. For instance, on the one hand, it comprises a rigidity and monotony which exert a considerable strain upon restless dispositions and untutored wills; while, on the other, it possesses a simplicity and regularity which strikingly contrast with the feverish uncertainty, the worry, the bustle, and the temptation involved in the every-day struggle for existence in the outer world. Such considerations as these must always be taken into account when we seek to make out what criminals really are.

Apart from the interest which criminal psychology possesses in itself, there are at least three important practical relations in which its study is both useful and necessary. There is, first, the study of criminals in relation to their crimes; giving us, as it were, an estimate of the psychological value of particular forms of crime. Secondly, there is the estimation of a criminal in relation to insanity, and to the special forms of mental disease revealing

themselves in him. Thirdly, there is the study of criminals *inter se*, withdrawn from social relationships, and under the special discipline of prison life. Although these have all an evident bearing one upon the other, they yet form distinct standpoints from which modes of mind in criminals may be viewed and investigated. It is mainly from the last-named standpoint that these chapters have been penned as a contribution to the study of criminal psychology.

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The accompanying pictures in heliotype, taken from original photographs, are sufficiently well-marked to form typical illustrations of the physiognomy in weak-minded criminals:—

1.—An Irish pig-driver. *Crime*—Rape and Manslaughter, with one previous conviction for theft. Remarkable baboon-like expression—a veritable “missing link.” *Simple mental weakness*, with animal propensities.

2.—A habitual criminal. *Crime*—wounding with intent to do grievous bodily harm: twenty-seven previous convictions, mostly for robbery. Gross, violent and brutish. Hopelessly intractable. *Emotional exaltation* of mind.

3.—*Crime*—Arson: after seven summary convictions for theft and misdemeanour. Cunning, treacherous and violent. *Mental exaltation*.

4.—*Crime*—Larceny: two previous convictions. Fanciful, destructive, and vicious. Ugly, weak countenance: has high notions of his personal attractions; numerous delusive ideas. *Delusional exaltation*.

5.—*Crime*—Rape: nine summary convictions for drunkenness and assault. Low-minded, sullen, obstinate, and determined: prison delusions about food and injustice of sentence; violent and threatening in manner. *Delusional exaltation*.

6.—One of the “worst of men.” Habitual criminal: thief from boyhood. Cunning, quarrelsome, irritating and mischievous, full of cowardly threats. Mental irritability. *Emotional exaltation*.

7.—Respectable, a casual criminal, a post-letter carrier, convicted of breach of trust. Mind a “prey to black despair.” *Melancholia* with *home sickness*.

8.—*Crime*—Burglary, with three previous convictions: most likely the tool of others. A wretched, scrofulous creature; poverty of intellect, and some tendency to irritability and even extravagant fancies. *Simple mental weakness*.

9.—A boy, almost idiotic: convicted of an unnatural offence. Generally well-behaved in prison. *Simple mental weakness*.

10.—*Crime*—Manslaughter: agricultural labourer. Almost a mental “automaton.” Lamentably weak, but behaves well usually. *Simple mental weakness*.

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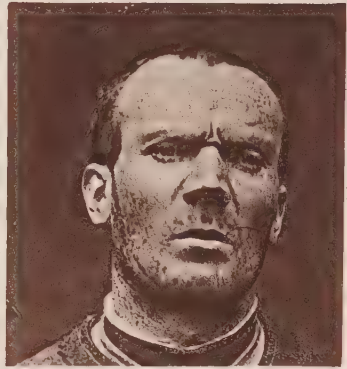
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*Heliotype.*

TYPES OF WEAK-MINDED CRIMINALS.

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*Moral Responsibility.* By S. MESSENGER BRADLEY, F.R.C.S.

Moral Responsibility, although often treated from a metaphysical point of view, has seldom been regarded from a physical or physiological side, and yet it is from this source alone that we are at present able to gain any accurate information respecting the working of the mind, and it is chiefly from this basis that I purpose here regarding it. The means of observation which metaphysicians employ have been known to, and employed by, philosophers for the last two thousand years, and yet it must be admitted with but a poor result. Until physiology came to their aid, they had not arrived at a knowledge of the fact that the grey cortical matter of the brain is the seat of the mind, and that intellectual action involves definite physico-chemical changes which we are to some extent capable of estimating. The psychologists, indeed, fixing their attention solely upon subjective phenomena, resemble those fatuous fakirs, who, intent upon a particular point in their own bodies, come to believe that the umbilicus is the seat of wisdom; or, rather, they resemble the horse in a threshing floor, which, however rapidly it may seem to advance, only retraces its steps in one small unending circle. It is a simple fact that, whatever positive knowledge we possess of the mental process has been obtained by the aid of physiology, and it is equally certain that all the knowledge we are likely to attain for a long time, if not always, must be derived from the same source.

The statement of Carl Vogt, and others, that thought is secreted by the brain as bile is secreted by the liver, is inaccurate, inasmuch as the circulation of a healthy blood through the latter organ is all that is required to set the secreting machine a-going, whereas something besides pure blood is needed to put the cortical cells of the brain, or the thinking machine, in action. This additional factor is the very subject matter of thought itself—it consists of something external to the body, and, with the important exception of ideas which are the direct offspring of memory, this external is conveyed to the brain along the avenue of the senses; thus some ideas result from vibrations carried to the brain cells by the auditory nerve, others arise from molecular changes in the optic, olfactory, or glossopharyngeal nerves; while other groups of ideas are prompted by messages carried along the path of the spinal sensory nerves in general. But after all

the brain does not widely differ from some other organs in thus requiring an external stimulus to rouse it into activity, *e.g.*, a rough analogy may be traced between its action and that of the stomach, whose peptic glands secrete the gastric juice from the circulating blood, but need the stimulus of food to excite the process. An apparent exception to this mode of stimulation is afforded by the action of the brain when it responds to an effort of memory, but although in this case there is no tangible external, yet the fact that memory is the recollection of foregone ideas which have had in their creation a tangible external, and which are set in motion in every instance by more or less clearly traced suggestions from without, entitles us to place even memory in the category of external stimuli. When, for example, "a poet puts together some piece of imagery, or describes some fanciful object, such as a castle of indolence or a haunted house, he begins with a mind already imbued with whatever has been written upon the subject before, *i.e.*, he has the external before him of another's description, who in his turn described some natural object and gave it a fanciful name." Thus every act of cerebration, conscious or unconscious, is the result of something existing outside the brain acting on the brain, something which is pre-existent; which is only stating in other terms that no such thing as entirely original thought is possible to the human mind. This statement may appear to open up the whole question in dispute between the two rival schools of moralists, the Utilitarian and the Intuitional, the former holding the opinion that no innate thought or principle exists in the mind, the latter arguing that we do possess innate principles, of which the "illative sense" of Newman may be taken as the highest example. For two hundred years the battle has raged between the two sects, and the victory cannot yet be claimed by either side. The present argument is not, however, at all affected by this contest, as I will briefly try to show, by quoting the doctrines of the rival schools. "It is an established opinion," says one of the greatest of Utilitarian philosophers, "among some men that there are in the human understanding certain innate principles, some primary notions, *κοινὰ ἔννοια* characters, as it were, stamped in upon the mind of man, which the soul receives at its very first being, and brings into the world with it. It would be sufficient to convince unprejudiced readers of the falseness of this supposition, if I should only show how men barely, by the use of their natural faculties,

may attain to all the knowledge they have without the help of any innate impressions, and may arrive at certainty without any such original notions or principles.”\*

On the other hand the doctrine of the Intuitionist may be understood by the following extract from the eloquent work of Professor Sedgwick:—“Naked, man comes from his mother’s womb, endowed with limbs and senses, indeed, well fitted to the material world, yet powerless from want of use; and as for knowledge, his soul is one unvaried blank; yet has this blank been already touched by a celestial hand, and when plunged in the colours which surround it, it takes not its tinge from accident but design, and comes forth covered with a glorious pattern.”†

It is difficult, I say, to see any material difference between these two schools, for not only do they agree in saying that external circumstances are needed to call forth these principles, but that the very notion of the principles depends upon the nature of the external circumstances: thus, *e.g.*, both schools agree in the fact that different nations have various grades, and even ideas, of morality; that the standard varies so widely that one nation may view an action as a cardinal virtue, which another nation, or even the same at a later period, may condemn as a cardinal sin; there is scarcely a single act, indeed, which is regarded as criminal by a Christian people, which has not at some time or other been looked upon as a virtue by some savage tribe. The only contention between the Utilitarian and the Intuitionist would be that one would maintain the notions on these points were part of the mental moral furniture intuitively (*i.e.*, really hereditarily), while the other would hold them to be acquired by the individual during his own lifetime.

The instances which history affords of the sudden appearance of a moral genius in a country may at first sight appear subversive of the statement that absolute originality of thought in moral questions is impossible, but I think it may be clearly shown that all such men as Cakyamuni, Hillel, Confucius, Plato, Seneca, St. Augustine, have derived their ideas from previous sources, so that even here no spontaneous generation of thought has taken place, and in a word, we are correct in saying that “*ex nihil, nihil fit*,” is as true in speaking of thought as of matter.

Speaking of purely intellectual action, physiological ex-

\* Locke’s “*Essay on the Human Understanding*,” p. 10.

† Sedgwick on the “*Studies of the University*,” p. 54.

perience leads us to conclude that the work done is dependent upon the physical condition of the cortical cells of the brain. And when we have ascertained the result of such agents as hereditary temperament, physical health, education, social position, climate, age, and so forth, upon the individual, we shall be unable consistently to deny that in every case the product, moral as well as intellectual, is the necessary resultant of a certain incident force operating on certain brain cells variously modified by various antecedents. It is the object of this essay briefly to trace the influence exercised upon the moral nature by such environments as those mentioned, but before doing so we may for a moment try to confirm the first part of the statement as to the action of the intellect apart from any question of morality. Confirmation is afforded by taking the case of two lads of equal age, equal health, and equal habits of application, setting them down to the same studies, and noting the result; the one develops the raw materials of fact so as to advance our knowledge of (say) mathematics, while the other is barely able to gain from the facts an acquaintance with the simple rules of arithmetic. One man sees tongues in trees, sermons in stones; to another "a primrose on the river's brim, a yellow primrose 'tis to him, and nothing more." Again, to show that without experience gathered from the senses the human mind is incapable of producing any thought, we may consider the condition of those who are congenitally deprived of two of the most important avenues to the brain—the senses of sight and hearing. In these cases, when it must be borne in mind there is no defect in the quality or quantity of the brain cells, but when the messages are only conveyed through the comparatively coarse media of the cutaneous nerves, and such modifications of the cutaneous nerves as the nerves of the nose and tongue, the brain never succeeds in developing abstract ideas, such as those involved in the conception of God, eternity, whiteness, and the like; though the excellence of the cerebral organ is plainly seen in the results obtained by diligently cultivating the few channels left open. The parable of the talents is true enough, so far as their different distribution is concerned; but the justice of the verdict is not so evident. The argument might be put aphoristically thus—the brain of man is never a *creating*, but simply a good or bad *answering* machine.

Let us now proceed to point out what evidence there is in

support of the inherent *moral* differences and moral possibilities of individuals. Is there evidence to prove that the human tree brings forth fruit after its kind in moral as well as physical and intellectual characters? We know that the Negro produces Negro, the Jew Jew, the Mongol types after his kind, and so on; but are the moral characteristics transmitted as well as the physical attributes? We shall find that there is probably as much evidence to show the heredity of moral as of physical characteristics, and indeed that this heredity extends to peculiarities of mind and manner just as it does to physical peculiarities. Thus we know that special peculiarities of structure, such as supernumerary fingers or toes, are transmitted from parent to offspring; and we have equally irrefutable evidence that virtues and vices are in like manner hereditary. Another point of analogy is this—in the case of the transmission of physical peculiarities, or physical diseases, such as gout, we find that though certainly hereditary, they may occasionally miss the generation first in order and appear in the grandchild; and in like manner this law of *Atavism* seems to operate in the case of the moral qualities, some prominent trait, such as dipsomania, being absent in the first and present in the second generation. The experiments of breeders have proved that certain moral qualities are transmitted in some of the lower animals; the disposition, for example, of pugnacity in poultry and in dogs may be ensured by careful breeding as certainly as (what is now beyond dispute) can the shape and colour of the tail feathers in a pigeon, or the character of the hair in a dog; and in the human family it is equally certain that “the brave are begotten by the brave.” “We know through the admirable labours of Mr. Galton that genius, which implies a wonderfully complex combination of high qualities, tends to be inherited;”<sup>\*</sup> and we know in like manner that the complex moral condition implied in the term “general nervousness” is invariably inherited, or rather (and this is a more striking fact) invariably transmitted; for as certain diseases (established by Brown Séquard’s celebrated experiments with acquired epilepsy in the guinea pig) when once acquired by an individual tend to perpetuate themselves in the offspring, so in the transmission of certain moral flaws, when once acquired by an individual previously sound, we have another reading of the words—“The sins of the father are visited upon the children.”

\* Darwin—“Descent of Man.”

There is no doubt that this transmission of the moral nature is often difficult to discern, just as it is often hard to trace the physical features of either parent in the child ; and this is probably due in the first case equally with the second to the varying proportion in which the physiological units of one or the other parent predominate in the offspring, but the more we investigate it the more absolute does heredity appear to be in the moral as in the physical department. If we take a complex subject like the musical faculty, for example, which implies the transmission of both intellectual and emotional qualities, we find overpowering evidence of its being due to inheritance : continual transmission and accumulation at length becoming an inherent property of the brain, which only requires, as in the case of Mozart, stimulating at a very early period to become excited into activity. The argument gains weight from regarding the converse of this fact ; thus the way in which a quality of the mind may be lost by continual repression and omitting to call the necessary cells into activity, is seen in the entire absence (or almost entire absence) of this same musical faculty among the Society of Friends, from whose services music has been banished, and by whom it has been disregarded for several generations. This double fact, viz., the national love and capacity for music among the Germans, on the one hand, and the abrogation of this property among the Quakers, on the other, is, I am inclined to think, sufficient to demonstrate the power the brain cells possess of transmitting their most subtle peculiarities. A careful weighing of the evidence, indeed, and “a due allowance being made for the influences which obscure the minuter manifestations of heredity,” entitle us to say that the offspring is in every case the exact product of the sperm cell and the germ cell ; and that if we knew everything about a man’s parents, we could predicate with exactitude his own physical and moral possibilities. This statement carries with it as a corollary the remark that the qualities of a child’s nature may not be the exact counterpart of the moral or intellectual qualities of either parent, but may represent the blending of two different but compatible qualities ; just as an acid and a base unite to form a neutral salt, so the synthesis of temerity in a father and timidity in a mother may become judicious courage in a child.

To a certain extent this doctrine, that a man’s moral nature, like his physical, is made for him, *does* meet with

general acceptance; for in admitting the influence of hereditary *temperament* a large concession is made to the truth of the argument, and no one will be bold enough to deny that different temperaments, which the individual volition will vainly attempt materially to modify, are inherited, such as cheerful, morose, timid, bold, &c.; and that these, again, are associated with special bodily conformations. Referring to this subject, Cabanis, whose work, "*Rapports du Physique et du Moral de l'Homme*," is full of interesting observations, says—"Les plus simples observations font d'abord apercevoir une correspondance entre les formes exterieures du corps, le caractère de ses mouvements, la nature et la marche de ses maladies, la direction des penchants, et la formation des habitudes." He goes on to show that the different moral temperaments (the amiable, the morose, the courageous, the crafty, &c.) possess corresponding bodily peculiarities, and that the internal organs are modified in each special temperament. The common expressions, "It's just like Roger," "he is cursed with a bad," or "blessed with a good temper," &c., indicate a general acceptance of the statement, that different men possess different moral temperaments. With the man whose nature is passionate, it is a blow and a word; the phlegmatic man under similar circumstances consults his lawyer. It may require the fancy of a poet to read, "rascal in the motions of the back, and villain in the supple sliding knee," but all are able to discern the general *modus* of a man's nature in his face and form. To praise firmness or good temper in some men, and to blame others for weakness or peevishness, is on a par with praising an eunuch for chastity, or blaming an Alfouro for fetishism. Let us here for a moment consider the effect which such a possession as physical beauty exercises upon the moral nature of man. The love of beauty is probably universal; true, the standard varies, but we are not now trying to fix a true type, "one and indivisible," we have simply to do with the fact that love of beauty animates the human breast, and indeed, probably influences not only his actions, but also the actions of many animals below the dignity of man. We not only love beauty, but we behave to it more gently, and more generously than to its opposite. Though no *wishing* will enable a man to add one cubit to his stature, we behave just as if it could so operate; for example, the knock-kneed pigeon-breasted youth who squints does not excite such pleasurable or such kindly feelings as are aroused

by the young Adonis of the same age. These feelings react upon the youths themselves, tending to make the latter fortunate youth proud or vain, according to original elements of character, and favouring by the same law the production of a humble or an evil nature in the former. The universal homage paid to beauty has resulted indeed in its possessor priding himself upon the possession as though it were his by special virtue of his own.

Nor does heredity influence the character in a physiological manner only, but pathology often plays an important part in determining the resultant moral nature. Not only are a vast number of diseases, such as insanity, gout, consumption, cancer, epilepsy, &c., each of which influences the moral temperament, hereditary, but many habits, and even tricks, of manner are ascertained to be transmitted from parent to offspring without any accompanying disease, and such cases may be regarded as instances of the inheritance of moral pathological traits. The influence which many diseases exercise upon the nature of the individual is prodigious, *e.g.*, in the various forms of insanity the whole moral nature is frequently not merely modified, but completely changed, and the bias which the nature takes may be shown to be in every instance dependent upon the *part* of the brain affected. Thus pathology enables us to state that irritation, &c., of the frontal cells produces insanity of the intellect, *acute mania*, &c., and that softening of the same parts leads to dementia; that irritation of the parietal and occipital cells results in moral insanity, *melancholia*, &c., often leaving the intellect quite unclouded; and that irritation occurring still further back in the cerebellum and medulla oblongata produces a want of controlling power over the movements of the body, or what might be called, insanity of the muscles. If we have irritation of the nervous centres below the latter region, that is, of the spinal cord itself, we have either increase or decrease of function, according to the nature of the disease, in the parts supplied by these centres: thus, speaking broadly, a convulsive muscle may be looked upon as evidence of spinal mischief, a convulsive idea as evidence of brain disease.

The combined testimony of those who have devoted special attention to mental diseases bears out the truth of this, which is tersely expressed by Schroeder Van der Kolk, in the following passage: "In insanity proper, in cases of confusion of ideas, and of haughty insanity, I have always found the

anterior lobes of the brain suffering, but on the contrary, in the melancholic, and in those who condemned themselves with or without religious admixture, I have found the upper and posterior parts of the lobes diseased, and that in the latter cases, the understanding often showed no trace of disturbance, inasmuch as the individuals judged correctly and disputed acutely. In those who had at last perished with dementia, I never found the anterior parts of the lobes intact; they were always adherent to the pia mater, and this could not be removed without injuring the grey cortex.”\*

It is easy, then, to understand from this how disease will often modify or even quite change a man's moral nature. Solomon, with inflamed frontal cells, becomes a raving maniac; and we have but to irritate his parietal cells to turn Diogenes into a pickpocket; excite the cerebellum, and Joseph is turned into Don Juan; the melancholy Jaques is nothing but Mark Tapley under a bilious attack; and a Bismark is metamorphosed into a Louis XI. by an attack of chorea. The mere presence of some foreign element in the blood will produce pretty much the same effects without special lesion occurring in any part of the nervous system. The presence of alcohol in the cerebral circulation, *e.g.*, stamps out the mind as completely as apoplexy or death itself. Bichat showed experimentally the deadening effect which the presence of venous blood in the cerebral arteries produces upon the mind, and the same fact is daily seen in the disease called morbus cœruleus, in which there is an abnormal mixture of venous with arterial blood in the heart, and afterwards throughout the system. There is a notable difference in the mental symptoms when diseases attack the chest rather than the intestinal tract: “the conversation is more lively, the emotions and anguish are more pronounced, when the lungs suffer than when the disease proceeds from the colon.”† We generally find that jaundice tints the mind with a gloomy hue at the same time that it colors the skin, and dyspepsia vitiates and depresses the moral nature as markedly as it affects the mucous membranes. Men of vigorous action are men almost invariably of vigorous digestion, and I have heard a man declare that he never dare go into the Stock Exchange unless his digestion was in good order.

The individual thus moulded by hereditary influence, physiological and pathological, comes into the world, and is

\* Schroeder Van der Kolk.—“Mental Diseases,” p. 46.

† Van der Kolk.—“Mental Diseases,” p. 127.

at once exposed to other influences, which in their turn operate upon the plastic human nature. It is beyond the scope of this essay to discuss these influences in detail, but we may glance at the effect produced by a few of the more important, such as climate, social surroundings, and education.

The existence of well-marked national traits of character is sufficient testimony to the influence exercised upon the moral nature of man by race and climate. In the most general way we find that equable and temperate climes tend to produce a happy national temperament, characterized by liberty of laws and stability of character, while less favored climes, particularly those subject to wide and sudden variations, are more often the abode of a melancholy and changeable race. There is scarcely a race indeed but has its characteristic vice or virtue—the love of the mountaineer for liberty, the bombastic egoism of the French, which humiliation and degradation fail to affect even for a moment, the parsimony of the Scotch, the deceitfulness of the Hindoo, the brag of the Yankee, the humour of the Irish, are examples. I have been told by those who have lived among them, that the different North-American tribes possess well-marked and widely-varying moral characters—that indeed they seem to touch every note in the moral gamut; thus one tribe is invariably truthful, while another is equally notorious for universal mendacity; bold courage distinguishes one entire tribe, sneaking timidity another; with one tribe you may lie down with the certainty that your impedimenta, however numerous, are secure, while with another your blanket and your beads are certain to disappear the moment you lose sight of them: the Indian of the plains is one thing, the Indian of the forest is quite another. Does not the direct way in which temperature stimulates the passions afford further proof of this climatic influence?

“What men call gallantry, the gods adultery,  
Is much more common in climates sultry.”

We find vice and cretinism in the Swiss valleys, valour and virtue on the heights above. “Mountaineers who breathe a pure air are more lively, quick, and courageous; and in those dwelling in a damp, misty air, one meets much oftener a sluggish, apathetic temperament.” Villeneuve reports that of ten suicides which occurred in a quarter of Paris in two years, nine happened in rainy and misty weather; and much information of a similar kind is collected by Boudin, Buckley,

and Quetelet. It is indeed quite remarkable how speedily some national characteristics are modified and lost, while others are acquired by fresh climatic surroundings. An immigrant Irishman, for example, in the second generation loses most of his Celtic features, physical and moral, and becomes Americanized. It was found during the civil war in America that migration to the Western States increased the stature and heightened the courage of the people; nay, it is stated by good authorities that even the size of the air-cells is altered by residence in high latitudes. Thus we have two facts—first, that the same climatic surroundings tends to produce a uniformity of morale and physique, and second, that changing the environments modifies both the one and the other. I have elsewhere adduced evidence to show that even the bony cranium is surely changed by changing external influences—thus, *e.g.*, measuring (by means of an instrument employed by hatters) a great number of European skulls, I found, *inter alia*, that the skulls of Frenchmen, whose ancestors had settled in England, showed a marked approximation to the commonest oval type of English cranium, while the French who came to England in adult life possessed crania bearing a strong family likeness to each other; and if this is true of the bony case, *a fortiori*, it must be true of the more plastic brain.

It is not perhaps necessary to press this point further, nor need the influence which social surroundings have in moulding the morals of man detain us more than a moment, as all will be ready to admit that—

“ ’Tis’n them as ’as muny as breäks into ’ouses an’ steäls,  
Them as ’as coäts to their backs, an taäkes their regular meäls,  
Noä but its them as niver knaws wheer a meäl’s to be ’ad.”

“Starve me,” says Thackeray, “keep me from books, and honest people, and educate me to love dice, gin, and pleasure, and put me down on Hounslow Heath with a purse before me, and I will take it.” The reason why *Gina’s Baby* took with the public was because it brought this truth home. Take two children, twins, say, and bring them up with different social surroundings from the moment of their birth, the one in poverty, hunger, and dirt, the other in a palace; the one becomes a pupil of Fagin’s and rots in a gaol, the other has his attention drawn to questions of legislation, and revises the sanitary code of his country. Are not the police reports, are not the horrors of the Alsacias in every town

sufficient to show the terrible influence of early evil surroundings? How can these poor wretches be virtuous when they know no crime save the crime of being found out? Though not omnipotent, the influence of such externals is powerful enough to largely determine the future moral character, and surely must diminish in our minds the moral responsibility of the criminal. The influence of education is but a part of such surroundings, but is so important a factor that it must be separately touched upon.

It is scarcely too much to say that education begins at birth, and that at a very early period impressions of a lasting nature are made upon the plastic brain. Most of the religious and political bias we see around us dates from the education during childhood; thus it is very generally true that the Wesleyan begets Wesleyan, the Ritualist begets Ritualist, the Radical father has Radical son, and so on. Even among superior minds the influence of early education is very potent—thus, *e.g.* we cannot doubt that in such men as Mill, Gladstone, and Newman, the explanation of the different results they arrive at in theological matters, is in a great measure to be sought for in the character of their training in youth, though of course something is due to the original inherited character of the brain. It is pertinent to the subject in hand, and at the same time interesting, to draw attention to three men of such genius, equally well informed, and on the same subjects too, equally accustomed to weigh evidence, equally in earnest, and equally honest, who arrive at three such different conclusions, after weighing the evidence, as Rationalism, Ritualism, and Ultramontanism. But indeed we trace the effects of education on every hand and on every subject; the education of the vestry leads to the acquirement of the “parochial mind,” the lawyer looks at a question from a legal point of view, the politician regards matters in the light of his party. The same people who approve of the Permissive Bill are found in the ranks of the Anti-Vaccinators, and at present swell the clamour which opposes the efforts of sanitary authorities to check a disease which most seriously affects innocent women and children. The High Church Party regard the men of science as dangerous innovators; the men of science are of opinion that the clergy are blind leaders of the blind. “Jack on his ale house bench has as much conceit as the Czar,” and the John Thomases of society are as thoroughly saturated with mannerism and formulas as

their masters. Even tricks of manner, the result of early training, thus often become integral parts of a man's nature, so that it is easy to say of such and such a work—"that is Dickens's, or Macaulay's," as the case may be. Nay, this is even true of the mere mechanical work of the hands; the fingers of an artist, for instance, often acquire a stereotyped style of movement, which it is impossible for him to avoid, so that at last the manipulation of Birkett Foster, or of Turner, becomes as much a part of himself as the shape of his hands. These few examples serve to show as well as more the all but infinite power of education upon the character; indeed, acceptance of the theory of no moral responsibility, far from ignoring the value of education, or denying its influence upon the character, raises it to the most exalted position, and goes as far indeed as to say that it can do everything but absolutely change the original conformation of the mind; for by habitually acting upon thought, it so modifies thought as to frequently render it difficult to detect the *inherited* nature, difficult, that is to say, to distinguish between natural and acquired characteristics of mind and heart.

If the foregoing statements be correct, what then is the law which dominates humanity? There is little difficulty in answering: the same law which governs the rest of the animate creation. This perhaps requires a few words of explanation.

He who looks with unbiassed mind at the world will readily enough discern that the struggle for existence is as keen and general among men as among the so-called inferior orders of creation.

In regarding this struggle for existence, we have nothing to do with the qualities of benevolence or malevolence in the designer of the Universe; we have only to do with the fact that the struggle exists. The law is one of might, of power, of ability, to live and flourish even at the expense of others. "The Mayfly is torn by the swallow, the sparrow speared by the shrike," may be applied with perfect truth and no great difficulty to the affairs of the human family. In a state of high civilization, such as that in which we live, this law is less apparent than in less civilized communities, but it is easy to see that it nevertheless exists. In savage races the law works without control; the weak one goes to the wall, and the fittest alone survives: the fittest, among such people, being the strongest of arm and the clearest of brain. When

artificial props and certain controlling agents come into play, such as civilized nations possess in hospitals, workhouses, and the like, many of those who would perish if left to the law are preserved, and so partially obscure its working; but it cannot be doubted that in England, at the present day, this law is as much an existent fact as in the wild regions of Equatorial Africa; that is to say, that a law which determines the survival of the fittest, survival in life, arrival *at* and survival *in* success of all kinds, is really at work. This law, inexorable like all natural laws, presses hardest upon the weakest, so that it comes to pass that the weakest class is at once the poorest and the most afflicted. They who from the nature of their surroundings have the least chance of raising themselves in the world, they who from the nature of their surroundings are necessarily debarred from any but the most wretched and too often the most brutalizing pleasures, are at the same time, and by the same circumstances, condemned to a life of much physical suffering, and it is amongst them in consequence that not only vice, but disease also, chiefly dwells and flourishes.

Let us now gather together these various arguments, and see to what conclusion they lead us. We have tried to show that man does not possess the power of original or of originating thought, but that his mind can only answer to a suggestion from without; we have brought evidence to show that the child is the *necessary* physiological result of the parental nature, moral and physical; that it is as impossible to breed children of a type different from their parents as to gather grapes off thistles, although outside influences largely operate to mould the subsequent character. We have further shown that disease often changes the whole moral and intellectual character of man, making the bold man timid, and changing the spendthrift into a miser; we have sketched the influence of climate and soil upon the human character, and have seen that the national peculiarities of man's moral nature are as indelibly stamped in as are his outward physical distinctions; we have seen that, though from want of perfect knowledge we cannot always predict the exact action any given man will take, we yet are justified in asserting that every man acts according to his nature. While admitting to the full the influence of education upon the character and the all but absolute power of externals generally, we have endeavoured to show that an inexorable law governs the resultant character, and that the struggle for existence is similar in character to

that which obtains amongst the lower orders of creation—the whole evidence thus converging to prove that the actions of men are the inevitable consequences of preceding circumstances. While the acceptance of this theory makes man part of a foregone scheme, while it involves the conclusion that the deeds, and even words, of both individuals and nations are dictated by the necessity of their natures, it leads us at the same time to infer, that inasmuch as every external circumstance exercises a certain and definite influence upon all that it comes in contact with, that inasmuch as the evolution of the world is ever progressive and attaining higher and higher standards, that as knowledge and truth are cumulative, therefore human nature will attain to an ever increasing excellence, and so we may rationally believe that the future of humanity will be brighter than its past.

It may occur to some that if this conclusion be sound prayer is necessarily absurd or at least idle. This is not so; the feeling of adoration, the need of worship, the desire to cling to an unseen and omnipotent power, are probably as much elements of our nature as filial and maternal love. Nor must the advantage of prayer be for one moment overlooked. True, prayer cannot reverse law, but it nevertheless strengthens the mind of the petitioner. Prayer is, in fact, good for the brain, just as exercise is good for the muscles; it is in fact exercise, and is necessary to keep the brain in health. In this way the rationalist may pray with earnestness and propriety; he does not suppose that prayers for rain bring down the clouds, or that prayers for peace hasten the termination of war, or that prayers for the sick influence the result of disease, but he may with earnestness and propriety pray for patience under affliction, for charity, for courage; prayers for such subjective qualities may, indeed, be said to assure themselves being heard and answered, for by placing the mind in an attitude of patience, or charity, as the case may be, they fit it for the habitual exercise of those functions.

Paradoxical, indeed, as it may sound, it nevertheless appears that the doctrine here upheld is not without its *moral* lesson, for though man be no more responsible for his moral disposition of good, bad, timid, courageous, false, truthful, cruel, or kind, than he is for the colour of his hair or the shape of his nose, still he would do much towards improving his species if he paid more attention to artificial selection; if he accepted the doctrine of the transmission of moral qualities

more fully, he would take more pains to select suitable wives; he would fix his attention less on dowries and the like and more on the fitness of the moral disposition. If this theory of no-moral responsibility were accepted along with the causes which I have endeavoured to show go to make up man's character, we should be more generally charitable in our judgments, more universal in our forbearance; though the proper treatment for vice might still be coercion (as I most firmly believe it is), still we should come to hate the sin and not the sinner, we should learn to look upon vice as "a miscalculation of chances, a mistake in estimating the value of pleasures and pains, as a false moral arithmetic." Above all it would lead us to be more than ever careful in the education and early surroundings of our children; we should emulate the method pursued with young Cyrus, at whose school we read, *ἐνθα πολλὴν μὲν σωφροσύνην καταμάθοι ἂν τις, αἰσχρὸν δ' οὐδὲν οὔτ' ἀκοῦσαι, οὔτ' ἰδεῖν ἐστι.*

In a word, we should endeavour to make the best instead of the worst of people and of circumstances. We should learn to live not *on* but *by* one another; brotherly love would no longer be a mere empty phrase, but a real bond of union knitting all hearts, and verily making the whole world kin.

*Two Cases of Apoplexy of the Pons Varolii, with Remarks on Syphilitic Disease of the Arteries of the Brain.* By JOSEPH J. BROWN, M.B., M.R.C.P.

(Read at a Quarterly Meeting of the Medico-Psychological Association, held at Glasgow, May 13th, 1875.)

CASE I.—J. W., æt 26. Admitted August 19th, 1874. Married. Blacksmith. Resides in Edinburgh.

*History.*—Patient's mother is of very intemperate habits, and has been so for many years. His brother died insane in this institution, and, besides the brain affection, suffered from phthisis pulmonalis. Patient enjoyed good health until about three months ago, when he began to suffer severely from pain all over his head, but most acute towards the vertex. This pain was not constant, but generally came on at night, or after much exertion of any kind. Five weeks ago, while he was at his usual work, he felt a creeping sensation over the left side of his body, and then felt as if all his muscles were drawn together. He lost the power of his left leg, and fell to the ground, lay for a few minutes, and then resumed his work again. After



My Dear George

3.

Dec. 8. #1855

I am going to get married to Martha  
Larkin I ever saw and have plenty of money  
\$20000 I have got rich and have endless means  
2 ways of making money.

Yours very sincerely & truly-

28<sup>th</sup> April 1863

4

My dear Dr. Laycock

I have just received your most kind note and Miss Wood desires me to give you her best thanks for so kindly interesting yourself for her - I intend writing in a day or two and will then let you know the result - thanking you very much for the trouble you have taken and your kind offer of making further inquiries should they be needed I am  
Affly yours

5 Tuesday - July 15<sup>th</sup> 1873  
In haste.

I have sent your little parcel to day - a poor woman was thankful for the work - besides the extra spoils you wished to be put in - she made one to put in another piece wh wanted it - as it was work out - & you had not seen it probably

6

Institution. Dumfries. Scotland  
December 27<sup>th</sup> 1866

I am obliged to relate and state several events of importance relating to the first time of my live my first appearance in this glorious Holy Great round world.

Our Saviour The Lord - God & & & . Made of little Ladies and Gentlemen & & & The Moon and The Stars - Thousands Millions one sun Million - s Millions of Ladies Gentlemen - The Moon

this he experienced the creeping sensation repeatedly. These sensations were followed by loss of power, and he once fell to the ground, but remained perfectly conscious. He was carried to a house and put to bed, when he stated that he felt the whole of his left side very cold. He was unable to move the left arm or leg, and his friends noticed his face was twisted a little to the right, but his articulation was perfectly distinct; patient also at this time felt severe pain on the right side of his head towards the occipital region. After rest for ten days or so he gradually recovered the power of the left side, so much so that he intended resuming his usual work on the Monday of the week he was admitted here; his friends, however, noticed his face remained somewhat twisted, and he frequently complained of pain in the back of his head. On Sunday morning (August 16), when patient attempted to rise from his bed, he found he had lost the power of his left leg and arm; his face was twisted much to the right side, and his articulation was much impaired; he was perfectly conscious, and told his friends exactly what he wished, though his speech was indistinct. During the day he got very restless and sleepless, and the following day expressed delusions about people plotting against him and wishing to take his life; also began to exhibit hallucinations of hearing, and got so excited and maniacal that he had to be removed to the asylum on account of violence.

*State on Admission.*—Patient was under the influence of chloral when brought, but after a few hours' rest the following facts were ascertained. He was fairly nourished, and of average muscularity. Hair dry, skin moist; temp. 98°F. No signs of any wounds or injury to the head; occiput very prominent.

*Digestive System.*—Tongue furred and dry, bowels constipated. Liver and spleen normal.

*Circulatory System.*—Heart normal; pulse 65, of good strength, and regular.

*Respiratory System.*—Healthy, breathing regular.

*Nervous System.*—Motor power was much impaired on the left side; the left arm lay helplessly by the side of the body; on being asked to move it, he took his righthand to lift it, and the power of grasping by the left hand was completely lost; the left leg was not so much affected as the arm, for the patient could draw it upwards while in bed, but could not stand. The face was drawn to the right side, and the lines of expression of the left side were greatly obliterated; the tongue was protruded to the left, and the articulation was indistinct and mumbling. Sensibility was almost absent over the left side, both to touch and temperature, while that of the right side remained normal. The conjunctiva of the left eye had lost all sensitiveness and the reflex action was abolished, as on being touched he felt no pain and the eyelids remained in the same position, while the right eyelids closed firmly whenever the right conjunctiva was touched. Pupils were equal, not abnormally contracted, and both were sluggish

in their action. Deglutition good. He was very confused in his ideas, and answered questions in a very imperfect manner; he imagined his wife was near him, and struck out at her, saying she had brought him to this; he was restless, and at times noisy, and talked in a disconnected, rambling way.

*August 20th.—Course of Case.*—Patient slept at intervals during the night. While awake he was very restless, noisy, and violent. This morning he is more conscious, and can answer questions; he recognised his mother and sister when they came to see him. He exhibited delusions regarding his wife's treatment of him, and his memory is much impaired. He can give a very indistinct account of his illness, and at times is very restless. The paralysis of the left side remains much the same as yesterday; the pupils are dilated to-day, and are somewhat sensitive to the action of the light. Pulse 70. Temp. at right axilla 97·5; left, 96·8°.

*August 21st.*—Patient is in much the same condition as yesterday; at times being very maniacal, at other times quiet, and talking more rationally. Pulse 80. Temp.—Left axilla, 99; right, 98·1°. Bowels have been well moved.

*August 24th.*—There has been no change in patient's condition until this morning, when he became more violent and excited, at times quite delirious, imagining people were about him to injure him. He is also getting very destructive, and talks now quite incoherently. Pulse 80, weaker. Temp. 98°. Ordered stimulants and liquid nourishment.

*August 25th.*—Patient has remained unconscious since yesterday, and is now unable to be roused. The power of deglutition is becoming impaired, and he has lost control of the sphincter muscles. Pulse 96, weaker. Temp. 98°F. In the evening patient was quite comatose, and weaker than at morning visit.

*August 26th.*—Patient died at four o'clock this morning, having become gradually more and more comatose.

*Post-mortem* examination was performed 32 hours after death. Body fairly well nourished; p.m. lividity over the dependent parts.

*Cranium.*—Skull cap peculiarly globular in shape, very thick throughout, and at some parts eburnified.

*Dura Mater.*—Thick and leathery, but not abnormally adherent to skull cap. On removal of the dura mater the brain was found protruding so as to render it difficult to replace the skull cap; the convolutions were very much flattened, and the sulci diminished in depth. At various places the convolutions appeared to have undergone slight local atrophy.

The arachnoid was clean, the pia mater stripped off easily from the convolutions. The vessels of the pia mater were much injected, and the venous sinuses were engorged with dark-coloured blood. There was a quantity of serum escaped during the removal of the brain and its membranes; and even after this there were between 4 and 5ozs. of

bloody serum taken from the cranium. On section, a clot, the size of a bean, was found at the upper extremity of the pons Varolii, nearer the anterior than the posterior surface, but causing no bulging externally, situated almost in the median line, but extending towards the right, and causing more disorganisation of the substance of the organ on this side. The clot consisted of coagulated blood, and was surrounded by yellow softening.

On further section of the pons towards the medulla there were found numerous extravasations surrounded by yellow softening, varying in size from a split-pea to a pin-head. The medulla was perfectly normal. Cerebellum normal, the puncta vasculosa being well marked.

*Cerebrum.*—The puncta vasculosa were very prominent, the lateral ventricles were dilated and filled with serum, and the white substance of both hemispheres was softer than normal. Encephalon weighed  $56\frac{1}{2}$  ozs.

*Abdomen (Liver).*—On the upper surface of the great lobe, about an inch from the anterior margin of the organ, a puckered cicatrix was found, which on section was seen to consist of an imperfect cyst formed of white fibrous tissue, and contained a dirty yellow-looking substance. The whole of the organ was a little congested; other organs healthy.

Small portions of various regions of the brain were hardened, sections cut, and set up in Canada balsam having been previously cleared with turpentine.

*Sections of the Pons*  $\times 100$ .—The pia mater was seen to be much thickened; the vessels in it were engorged with blood, and spaces were seen at various parts of the field of the microscope; some being circular, with clearly defined outline, others being irregular in shape, and the outline broken up.  $\times 450$ .—The smaller arteries were seen to be more or less tortuous; some were engorged with blood, giving rise to swellings of a fusiform shape along the course of the vessel. The muscular coat was thickened, and the outer fibrous coat was seen to be in many cases very much increased. In and around the outer coat a molecular deposit was distinctly seen, in some instances completely choking up the perivascular canals. This deposit, on some of the vessels, was finely molecular; on others it was seen to be more granular. The nuclei of the walls of the smaller vessels were clearly demonstrable; also the nuclei of the neuroglia were very distinct and numerous.

In sections from the various convolutions under  $\times 100$ , the pia mater was seen to be thickened, and its vessels engorged with blood. Spaces were seen of much the same appearance as those in the pons, but, as a rule, their outlines were more regular. Under  $450\times$  the smaller vessels were found to be in much the same state as those from sections of the pons; they were tortuous in their course, filled with blood in many instances, and their outer wall was much thickened, in and around which a molecular deposit was generally to be clearly seen.

The nuclei of the vessels and of the neuroglia were numerous and well defined. The cells in the grey matter were comparatively free from degeneration of any kind in all the sections examined. The clear spaces as seen under  $\times 100$ , when examined under this power, were in many instances seen to contain a transverse section of a vessel with a molecular or finely granular deposit external to the vessel, and filling up more or less completely the space; in other cases the spaces were unoccupied. When the outline of the spaces was irregular a few broken nerve fibres could be seen projecting into the space.

CASE II.—J. B., æt. 30. Admitted August 28th, 1849. An accountant.

*History.*—Patient had a severe attack of syphilis at the age of 17, for which he was treated with mercury; after this he was always irritable, on bad terms with his companions, and was subject to fits of anger. One day while alone in the house with his mother he suddenly attacked her for making some trivial remark; he then seized the poker, ran out of the house, and smashed the door of a neighbouring house, where his mother had taken refuge. He was taken to the police office, and seems to have had a hemiplegic attack during the night, as on the following morning he could scarcely speak and the power of one side was much impaired. He was taken to a private asylum at Musselburgh, where he remained for about ten years, and from which he was transferred to this asylum.

*State on Admission.*—Patient suffers from delusions, and at times hears voices speaking to him saying he is “low,” “mean,” &c.; also has illusions, often seeing figures before him, and imagining they jump down his throat. He is taciturn and inclined to be melancholic and depressed. His general health is good beyond being pale looking.

*February, 1851.*—Patient is in the enjoyment of good health; is useful at the garden work. He is often irritable and abusive against his spiritual tormentors, who call him names, destroy his happiness, and never let him be at peace for a single day. He frequently strikes out at these imaginary tormentors.

*January 16th, 1852.*—Has been more troubled of late with his delusions; he fancies some one of the spirits (a woman) has located herself in his mouth, and prevents him from speaking distinctly; she makes his food pall upon him, and converts his taste into bitterness. His gait is unsteady, and one of his legs seems to be slightly dragged during walking. After this date patient's mental state remained the same; he was irritable, and even violent to the attendants; at other times quiet and peaceable. His delusions were also of the same nature as already stated. His bodily health gradually got weaker; he was troubled with dyspepsia, and the impairment of the motor power of the lower extremities gradually increased.

1866.—No change mentally. Suffers much from his stomach;

appears to labour under a form of chronic gastritis. Has at times a good deal of pain of a burning character both before and after meals; this is sometimes relieved by taking food. Bowels constipated. He exhibits an increasing want of co-ordination in both his legs and arms, but especially the former; walks with a stiff, jerky, uncertain gait, and appears to be labouring under a degree of locomotor ataxy.

There is no entry of importance in the patient's condition until 1874, when patient's mental state was that of mild dementia; he was irritable, and laboured under delusions of the nature already indicated, still believing in his spiritual tormentors, &c. At times he was pleasant, agreeable, and made himself generally useful, as far as his health would allow him. His bodily condition was weak, his complexion was pale and waxy, his lips were bloodless, and he was generally anæmic. He suffered much from dyspepsia; his tongue was loaded at the edges and red in the centre, thirst excessive, bowels constipated. Motor power was much impaired. He walked in a jerking uncertain way, always keeping his feet wide apart; suffered much from pains down his legs and in his feet, and the reflex action was almost absent.

*January, 1875.*—Patient suffered much from dyspepsia, and got gradually weaker; he then began to suffer from obstinate diarrhœa and pain in the abdomen. This disease continued until February 17th, when patient died from exhaustion.

*Post-mortem* examination was made 30 hours after death. Body much emaciated.

*Head.*—Skull-cap adherent, bone dense.

*Dura Mater.*—Thick and leathery.

*Arachnoid.*—Opaque at some points, more particularly along the line of the vessels, and over the junction of the parietal, with the occipital lobes of both hemispheres. Pia mater stripped off easily from the convolutions. Underneath this membrane a thin layer of blood was extravasated, situated at the posterior and lateral region of the frontal lobe of the left side, and extending backwards over the left parietal lobe; this extravasation occupied the spaces formed by the somewhat atrophied convolutions of this region. The convolutions, particularly of the frontal and parietal lobes of both hemispheres, were atrophied, and the sulci were wide and filled with bloody serum.

The pons externally appeared normal, but on section, in the upper extremity of the left half of this organ a cyst the size of a hazel nut was found, the wall being formed of tough, fibrous-looking material, and containing a reddish-brown fluid, with a hardened clot, the size of a split pea. (This fluid contained numerous shrivelled blood corpuscles, fatty granules, and broken-down nerve substance could also be detected in it.)

*Cerebellum and Cerebrum.*—On section the substance was pale, the vessels dragged, and were surrounded by distended perivascular spaces.

*Spine.*—The membranes appeared healthy ; the cord itself was pale on section, and was firm in consistence. No softenings were seen at any part.

*Abdomen.*—Peritoneum was inflamed, lymph effused, which matted the bowels more or less together. The mucous membrane of both the small and large intestine was congested, and at some parts of the small intestine this condition was seen in well-marked patches.

Portions of the brain and cord were hardened in chromic acid and sections made.

*Pons.*—Under  $\times 450$ , the arteries were seen to have the muscular coats greatly hypertrophied, the outer coat was thickened, and in and around this coat was a molecular deposit containing numerous granular masses, this deposit in many instances completely filling up the perivascular space. (See Fig. 1.) At some parts of the section the vessels were patent, and seen to contain blood corpuscles ; others were completely closed, and presented the appearance of concentric rings in the centre of a molecular or granular deposit. In a longitudinal view of a vessel this deposit was seen to exist along its entire course (see Fig. 2), and in many instances the wall of the vessel could not be detected, owing to the amount and the opacity of the deposit. The vessels near the region where the hæmorrhage had taken place were most affected, and the morbid appearances were here best seen. In some sections the deposit appeared in the form of ill-defined concentric rings, and presented the appearance of what has been figured by Dr. Batty Tuke as characteristic of the vessels in syphilitic insanity, though in a minor degree. In some places an altogether different kind of occlusions of the small arteries was seen, viz., an embolismic filling up of their calibre with a dark hard substance broken up into lengths, looking like some kinds of hair that have black pigment cores cut up into little bits by transverse clear striæ. Spaces were also seen in the field of the microscope with irregular margins, and in some specimens the broken ends of nerve fibres could be seen projecting into the space.

In sections from the parietal convolutions the cells were seen to be degenerated, and in many places the cell spaces were occupied merely by a few granules. (See Fig. 4.) The vessels had the muscular coat hypertrophied, and a molecular deposit containing a few granular masses was seen outside the somewhat thickened external coat. The neuroglia was well seen and appeared to be more molecular than normal. Much the same conditions were seen in sections from the occipital convolutions, only the vessels in these convolutions were more generally and extensively affected. In the frontal convolutions the cells were not so much diseased, and the morbid appearances of the vessels were not so well seen as in the other convolutions.

*Spinal Cord.*— $\times 450$  the arteries had the muscular coat hypertrophied, the outer coat much thickened, and in some a molecular or

granular deposit external to this coat; many of the vessels were completely occluded, others were more or less patent and contained blood corpuscles. The cells in both the anterior and posterior horns of the gray matter were degenerated, but those in the posterior were more affected; the outline of the cells was ill-defined, their processes decayed, and in many a few granules was all that was left in the cell spaces. The fibrous material around the nerve fibres at the external part of the cord was much increased; this was well shown in transverse section (see Fig. 3), which presented a sort of honeycomb appearance. In a section from the dorsal region, many microscopic apoplexies were seen confined to the white substance only, and situated at the posterior and postero-lateral regions of the cord. These consisted of dark hæmatoidin crystals and shrivelled blood corpuscles surrounded by a fibrous substance, external to which was a granular or molecular material separating the whole from the surrounding nervous structures. In some cases the vessels could be distinctly traced into the apoplexy. They varied in size from  $\frac{1}{2000}$  to  $\frac{1}{500}$  of an inch in diameter, as many as three and four could be seen in the field of the microscope at a time.

*Remarks.*—There are several points of great interest in these two cases, which, I think, are worthy of attention. And first as regards the symptoms of hæmorrhage into the pons. In the case of J. W., which we had the opportunity of observing shortly after the attack, there was no one symptom or group of symptoms which could lead us to diagnose that the hæmorrhage was in this particular region of the brain; there was paralysis of the whole of the left side, from which we concluded that the lesion was in the motor tract above the crossing of the portio dura, and as there was no loss of consciousness during the seizure, we thought that if hæmorrhage had occurred it could not be extensive. In a case of hæmorrhage into the pons, published in the “Lancet” of February 6th, 1875, great stress is laid on such symptoms as intermittent pulse, interrupted breathing, copious sweating of the head and face, &c., which are considered as diagnostic of this lesion, but in this case the breathing was not in any way irregular, and it gradually became more and more laboured as the coma increased; the pulse was not intermittent, nor had we any profuse perspiration of the head and face, and the pupils were not abnormally contracted. Another peculiar feature was the successive attacks at the commencement of the illness, indicated by slight loss of power of the one side, and ultimately complete paralysis, which I think is fully explained by the condition of the pons found at the post-

mortem—the numerous smaller hæmorrhages having taken place first, and the larger being the cause of the more complete paralysis.

Next as to the fatality of apoplexy of the pons, Niemeyer states that if of any size it constantly proves rapidly fatal, and in Reynolds' system of medicine we have this statement corroborated. Now in the case of J. B. there is little doubt but that the hæmorrhage occurred when the patient was in the police cells at the age of 20, and during his residence in the Asylum at Musselburgh the hemiplegia must have disappeared, as no symptom of any motor lesion existed when he was admitted into the Royal Edinburgh Asylum some ten years afterwards. Indeed, no notice is taken of any motor impairment until January, 1852, three years after admission, and, as already stated, it was at first very slight; the symptoms, however, gradually increased until the patient's death, and I venture to think these symptoms were due to slow degeneration of the spinal cord, which is shown by the microscopic appearances of that organ.

In the case of J. W., the immediate cause of death was not the hæmorrhage into the pons, but the large serous effusion consequent on the congestion of the brain and its membranes, and this is further proved by the symptoms of the case, viz., the hemiplegia resulting from the hæmorrhage, afterwards the mania and excitement marking the commencement of the diseased process, and ultimately the coma, which became more and more profound until death, coma being no doubt due to the serous effusion. These two cases help to sustain the assumption that hæmorrhage into the upper extremity of the pons Varolii, when even of considerable size, is not so fatal as we are led to suppose by the writings of various authors on the subject.

In the case of J. B. there is a distinct history of syphilis, and when we consider the character of his delusions, viz., that he was persecuted by spiritual tormentors which appeared before him chiefly at night; the hallucinations of the senses, the depression and melancholy at times alternating with attacks of excitement, I think we are justified in concluding that this was a case of syphilitic insanity belonging to that class which the late Dr. H. Grainger Stewart has described in a paper in the "*British Medical Journal*," 1870, on this subject. The peculiarities of this case are the duration of the disease, and the fact that there was no tumour, softening, or gumma found at the post-mortem examination, which so

frequently prove fatal in syphilitic disease; but the affection seems to have been of the most chronic nature, attacking the whole central nervous system, and giving rise to symptoms which were obscure and slowly developed; consequently, upon microscopic examination we find lesions of the most marked character throughout the brain and spinal cord. The vessels were much diseased, the muscular coat hypertrophied, the fibrous outer coat much thickened, in and around which a deposit, molecular or finely granular, was seen containing masses of larger granules in groups around the vessel. (See Figs. 1 and 2.) This was the appearance most frequently met with, but in some cases the deposit was not so extensive, and was finely molecular in character, while in others it was in ill-defined concentric rings. The vessels throughout the brain and cord were pretty generally affected, and in many instances they were completely occluded. This condition of the vessels interfering with proper nutrition must have affected very materially the other tissues of the brain and cord; hence we find that the cells were degenerated, the neuroglia increased, and atrophy of the convolutions was well marked,—a pathological state which fully accounts for the psychical symptoms. In the cord the pathological changes were equally well seen, and these, increasing slowly, gave rise to motor symptoms, which gradually became more and more marked until we had the staggering gait and pains in the limbs much resembling locomotor ataxy. The patient had lived so long that the pathological changes had time to develop themselves to an extent that we seldom see in syphilitic or insane patients.

In the case of J. W., though there was a suspicious looking cicatrix on the liver, and the patient had been loose in his habits before marriage, as I ascertained from his companions who visited him, yet the positive proof of this being a case of syphilitic disease of the arteries of the brain is not certain. But I would suggest that the deposit found on the arteries might be of specific origin, and that as the case was so acute the appearances presented were those of the commencement of the disease.

The exact pathogenetic relationship of the granular and molecular deposits outside the vessels to the thickening of their coats is very interesting, and suggests many important points as to the effect of diseased blood vessels in the brain and their consequences. I think the appearances warrant

the conclusion that the primary disease was an inflammation of the outer coat of the vessel, and as a result there was a finely molecular exudation in and around this coat which is well shown in the case of J. W., and in a few of the vessels in the case of J. B. This molecular deposit then became affected with degeneration, which gave rise to the granular appearance as seen in most of the vessels in the case of J. B. (see Figs. I and II), where the disease had lasted many years, and gave time for the degeneration to become well marked. The hypertrophy of the muscular coat must have taken place at the same time that the morbid change was going on in the outer coat, for in no instance was the outer coat affected without hypertrophy of the muscular coat, nor had we in any case simply hypertrophy of this coat, without disease of the outer fibrous coat also.

#### DESCRIPTION OF PLATE.

Fig. I.—Shows transverse section of vessel with deposit, from the Pons Varolii  $\times 300$ .

Fig. II.—Longitudinal view of vessel with deposit, from same part of Pons  $\times 300$ .

Fig. III.—Transverse section of spinal cord from dorsal region, showing increase of fibrous tissue around the nerve fibres.  $\times 300$ .

Fig. IV.—Section from ascending Frontal Convolution, showing degeneration of the cells in different stages.  $\times 450$ .

### CLINICAL NOTES AND CASES.

*Note on the Histology of the Human Brain.* By HERBERT C. MAJOR, M.B., Edin., West Riding Asylum, Wakefield.

Having always urged very earnestly the study and record of every histological structure or peculiarity which may be found in the brains of persons dying *sane*, under all variations of age and circumstances, I think it right to give a brief notice of a case which illustrates very well the great importance of such a study.

On the 22nd of March I received from my friend, Dr. J. J. Pickles, of the Leeds Infirmary, to whom I am indebted for many valuable specimens, the brain of a man aged 47, who died from the effects of a compound fracture of the leg, sustained nine days previous to admission into the infirmary. So far as could be ascertained by abundant observations, he appeared to be a perfectly healthy and an intelligent man. The brain, which was sent to me as a presumably healthy organ,

presented no features of abnormality; there was no wasting of the convolutions, no thickening of membranes, and no appearance of vascular disease. Nevertheless, on submitting thin sections to the microscope, the fact was established beyond a doubt that, in many instances, the pyramidal nerve cells of the cortex were morbidly affected. In the majority, indeed, no change could be detected, but in a considerable proportion it was quite distinct and conclusive. The abnormality consisted in the accumulation of yellow granules in the interior of the affected cells, in no case going to the extent of producing destruction of the corpuscle, but at most a slight bulging and alteration in its form. The nuclei and nucleoli appeared to be unaffected. I noticed further that the condition above described could only be seen among the large pyramidal cells of the deeper layers of the grey matter, and not in the smaller superficial bodies; and lastly that, at the posterior extremity of the occipital lobe, the nerve-cells, with rare exceptions, presented no evidence of any morbid process.

It appears to me that the case here briefly stated is not unworthy of serious attention. In the first place it illustrates the fact that *some* of the nerve corpuscles of the cortex may be morbidly affected without any appreciable mental impairment. It shows, secondly, that while to ordinary appearances the brain may seem quite healthy, the microscope may reveal commencing change in the nerve elements. Further, it furnishes additional evidence of the fact I have always maintained, that the nerve cells of the occipital lobe are the last as they are the least affected by the atrophic process. And lastly, it impresses the necessity of the utmost caution in connecting histological changes in the brain after death with mental phenomena manifested during life.

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*Case of Severe Cut Throat: Nourishment of Patient by Enemata: Recovery.* By M. D. MACLEOD, M.B., Assistant Medical Superintendent Garlands Asylum, Carlisle.

James G., aged 30. Labourer. Married. Admitted 9th July, 1874.

*History.*—On the 8th July this man cut his throat severely with a razor while labouring under an attack of *delirium tremens*, from which disease he had suffered for three or four days previously. The hæmorrhage from the wound was stated to have been very great. He had slept none for four nights previous to his admission, neither had

he taken any nourishment during that time. After cutting his throat he was unable to swallow anything, as whatever he tried to come out through the wound, and caused a most alarming paroxysm of coughing.

*State on Admission.*—Mentally he was quiet, much depressed, and somewhat suspicious. His memory was confused, and he was incoherent for the most part. He did not always answer questions put to him, and he seemed to have no delusions.

*Bodily.*—He was much prostrated, and looked pale and bloodless. He had bronchitis of both lungs. Pulse 102, weak. Temperature 104°. Tongue dry, black, and excoriated.

In the upper part of his neck, immediately below the hyoid bone, there was an incised wound four inches long and one inch wide, in the median line of the neck, on each side of which it extended nearly equally. The incision was transverse in its direction, and opened into the pharynx at the root of the tongue, detaching the epiglottis from its base, and exposing the upper half of the box of the larynx. The larynx, owing to the division of the tissues above and in front of it, dropped slightly forwards, so that the direction of the opening of the glottis was more upward than normal. The edges of the wound were red, swollen, and tender. On his attempting to swallow a mouthful of beef tea, all of it came through the wound, and its contact with the unprotected larynx almost caused suffocation, and brought on a severe and prolonged paroxysm of coughing. He could speak fairly well when he bent his head forward.

*Treatment and Progress of Case.*—He was put to bed, and an enema of beef tea, eggs, and whisky was given him. He retained the enema, and a similar one was administered three hours later.

10th July.—Slept half the night. Is quiet, and states that he feels better. Cannot swallow at all. Rales and crepitation heard over both lungs. Edges of wound red and swollen. Tongue dry and black. Fauces swollen and tender. M.T. 103°. M.P. 120. E.T. 104°. E.P. 120. Had three enemata, which he retained.

11th July.—Sleepless and restless during the night. Had a small motion of bowels. No change in condition of lungs. Wound suppurating along edge. Fauces swollen and inflamed. M.T. 100°. M.P. 96. E.T. 100·6°. E.P. 96. Retained three enemata.

From this date improvement went on gradually. The patient became cheerful and anxious to recover. The wound in his neck healed slowly by granulation, and was completely cicatrized on the 15th October. No local treatment beyond occasional sponging was applied to it. The attack of bronchitis from which he suffered passed off in about ten days from the date of his admission, and his temperature gradually fell from 104° on the 10th July to 97·6° on the 20th, after which date it was normal.

Up to the 30th July—twenty-one days after admission—he was quite unable to swallow, and any attempt to do so brought on the most

alarming symptoms of suffocation. During these twenty-one days he was entirely nourished by enemata. Each enema consisted of one pint of strong beef tea, in which there was two eggs beat up. Three were administered daily: one in the morning, one about noon, and the third at night. To the morning and night enemata were added 2oz. of whisky. They caused no discomfort, and the patient retained them wholly. His bowels were moved generally every second night, when he passed a small quantity of solid fæces. On the 30th July he could swallow liquid food, but with some slight difficulty and distress; the enemata were continued for more than a week longer, until he could take a fair quantity of nourishment by mouth. During the period he was being so sustained he lost 1·6 lbs. in weight; for on admission he weighed 148 lbs., and on the 30th July (the day he first was able to swallow any food) he weighed 146 lbs. 8 oz.

After a month's trial at home he was discharged recovered on the 22nd November, 1874. During his residence in the asylum he gained 32lbs. in weight.

*Remarks.*—The noteworthy points in this case are the severity of the wound recovered from under such unfavourable conditions; the successful nourishment by enemata for a lengthened period, as shown by the partial healing of the wounded parts; the recovery from bronchitis; and the trifling loss in weight during the time no food was swallowed. This mode of nourishment in cut throat is not generally recommended by writers on surgery, but seems a very rational mode when the pharynx and œsophagus are wounded and inflamed, and the passage or presence of a stomach tube would not only cause distress to the patient, but retard the healing of the wounds.

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*Report on the Morbid Conditions found existing in a Case of Acute Insanity ending fatally within a week.* By RINGROSE ATKINS, M.A., M.D., Assistant Medical Officer, District Lunatic Asylum, Cork.

As the morbid appearances found in the brain in recent cases of insanity are of extreme importance in elucidating the pathology of mental disease, the report of the following case may prove of some interest:—

T. McC., aged 23 years, admitted into the District Asylum, Cork, March 25th, 1875, under the following circumstances:—On the Monday previous he had become an intern patient in the South Infirmary, having come up from the west of the county, suffering from chest

symptoms ; before, however, his history had been noted, or accurate examination made, symptoms of mental derangement developed themselves ; he almost suddenly became excited and noisy, leaped out of bed, talked at random, and terrified the patients around him ; so troublesome did he become, that it was necessary to restrain him from doing harm, and on the Thursday after, the symptoms not subsiding under the use of bromide of potassium and morphia, he was transferred here, when his condition was as follows :—

*Mental State.*—Patient tolerably quiet, but perfectly incoherent, does not seem to realise his position in the slightest degree ; cannot speak or answer a question rationally, but keeps constantly muttering unconsciously ; when approached with the view of examination he shrinks away, as if from fear, and resists, as far as his strength will allow him, any attempts made in that direction ; his expression is vacant, and his gaze unsettled and wandering.

*Bodily Condition.*—Very much emaciated, and looks almost in a dying state ; respiration hurried and shallow ; lips and nose dusky ; cough troublesome ; so far as could be ascertained, dulness existed over both lungs. He was ordered mustard sinapism over the chest, and to be supported with beef tea, wine, etc. In view of his serious condition, his father was at once communicated with, and he arrived the next afternoon ; he proved to be an excessively stupid little old man, and could give no information whatever regarding his son, save that he was married, had two children, had been suffering from a cough for twelve months, and that he had come to the infirmary on his own responsibility without the advice of any medical man. As far as could be ascertained from him, the family history was good, none of its members having been affected with “insanity” or “consumption.” The unfortunate patient did not recognise his father, and paid no heed whatever to him ; he continued in the above condition throughout Friday, Saturday, and Sunday, food being taken only under pressure. On Sunday night, however, he became very much worse, sank rapidly, and died early on Monday morning, nearly one week after the mental derangement had showed itself.

*Post-mortem Examination Seven Hours after Death.*—The temperature of the body was still considerable, and *rigor mortis* was present in only a slight degree. Emaciation was far advanced, especially of the face and chest. On removing the calvarium the osseous tissue was very vascular, being otherwise normal ; the dura mater was smooth, and during its removal a quantity of dark liquid blood escaped from the distended sinuses ; a small quantity of fluid was present under the pia mater, the vessels of which were intensely congested and distended with blood, this being most marked on the superior surface of the organ ; there was no appearance of exudate lymph anywhere, neither were there any adhesions between the bone membranes or brain substance. Both lungs were found studded throughout their entire substance with “miliary tubercles,” each about the size of a grain of

rape-seed; the left lung in addition was found highly engorged, and of a bright red colour throughout, a vomica about as large as a walnut lined with a smooth membrane existed in its apex; the right lung was of a greyish colour, in this respect strongly contrasting with the left organ. On cutting into the left lung, many of the vessels were seen distended with almost decolorized plugs, which formed perfect casts of them.

*Microscopical Examination.*—Sections were taken from the various lobes, and on examination the following appearances were observed:—

1st, *Frontal Lobe.*—Many of the vessels were packed with blood corpuscles and dilated, but the greater number were empty, a few globules only clinging to their sides; outside the walls, and attached to them, in numerous instances, was seen a bright yellow exudation, occurring in masses of a dimly granular appearance; this was present in greatest quantity in those vessels the walls of which were extremely thin and delicate. The outer fibrous coat of many of the arterioles was thickened and corrugated, and in these vessels the exudation spoken of was not at all so apparent.

2nd, *Parietal Lobe.*—Many of the vessels ramifying in the pia mater, and passing from it to the cortex of the brain, were seen crowded with yellowish blood corpuscles, but, as in the frontal lobes, many were quite empty. Numerous minute extravasations were seen between the pia mater and brain substance, some visible to the naked eye, whilst others were distinctly seen with a low power; these minute hæmorrhages were both globular and stratiform, the blood being effused into the meshes of the pia mater, and lying in delicate layers on the surface of the convolutions. These little extravasations were most numerous where the pia mater dipped down into the sulci between secondary and minor convolutions, and at the bottom of these sulci the grey matter was a purplish-red color, having imbibed the colouring matter of the blood; this condition, however, was not general. None of these extravasations were to be seen in the brain substance itself; the yellow exudation, so apparent on the vessels of the frontal lobes, was not so observable in the parietal sections examined. Many of the arterioles had their outer coat thickened, and, in several, minute thrombi were seen occupying their calibre, which was much contracted beyond.

3rd, *Occipital Lobe.*—The same appearances detailed above were also present here in greater or less degree; and in the various sections from all the lobes the cells were perfectly healthy as to arrangement and structure, and the neuroglia was beautifully transparent and homogeneous.

Sections through the lungs showed the tubercular granules to be more or less “massed,” but under the microscope the focus of origin of each was distinctly and beautifully seen, existing in the tissue between the alveoli, which were destroyed by compression; thus the breathing surface of the lungs was greatly diminished.

*Remarks.*—The result of this examination well illustrates the somatic origin of the mental derangement present, and the appearances observed explain its nature. The minute hæmorrhages, vascular exudation, and thickening of the outer coat of the vessels, were all plainly the result of congestion and its consequences; and to the condition of the lungs this state may at once be referred. The breathing surface of the lungs already encroached upon by the masses of tubercles, compressing and destroying the air vesicles, must undoubtedly have given rise to a difficulty in the aeration of the blood and in its passage through the organs; added to this, the rapid engorgement of the entire left lung which supervened, caused a gradually increasing difficulty, amounting almost to a condition of stasis, as evidenced by the lividity observed during life, and the plugging of the vessels seen post mortem; this condition of the lungs led in turn to an almost similar condition of the cerebral vessels, and hence as a consequence, through disturbance of nutrition of the nervous tissues, to the mental disorder. Although excessive vascularity of the brain is, in a great majority of cases, the true cause of mental disease in its earlier or active stages, yet it is not always so easy to discover the origin of this condition as in the present instance, it most frequently depending on some influence on the muscular coats of the vessels themselves, the result probably of a primary change in the vaso-motor apparatus. Here, however, the congestion was without doubt dependent on the disease in the lungs, and, as such, is a good example of a not uncommon class of cases, where the mental disorder is either directly dependent on, or predisposed to, by primary disease in other organs of the body.

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*A Case of Impaction of a Knob of Wood in Œsophagus, which had been swallowed with suicidal intent. Œsophagotomy—Death.* By Dr. RORIE, Dundee Asylum.

M. M., female; single, æt. 37; admitted into Dundee Asylum 24th December, 1874. Patient had been more or less insane for eight months, during which time she had frequently threatened suicide, and declared that she had often tried to poison herself, but could never succeed in doing so. Has been in the habit of taking laudanum freely, although the quantities consumed could never be ascertained. Has taken no solid food for three days, giving as a reason that she could not get it over, as she had swallowed the knob of a mirror,

and which was sticking in her throat. Her friends assured me that this must be a delusion, as she swallowed fluids easily. The first medical certificate on patient's admission paper testified that she "is highly nervous and excitable, insists that she has swallowed a round ball of mahogany to destroy herself;" the second one that she "says she has swallowed something that will be sure to kill her, and although quite able to swallow, declares that she is not able to let over even a mouthful of water. She has various other delusions."

On admission her bodily condition was thin, frail and emaciated, and mentally depressed and melancholy, insisting that she could not swallow anything, and would die. No trace of any foreign body could be found by external examination. A glass of water was given to her, and she was requested to drink it. This she declared she could not do, but apparently with an effort got over several mouthfuls, and said she felt better. The manner in which she swallowed the water was exactly as occurs in ordinary hysterical cases, where patients refuse food, except that there was a scarcely perceptible regurgitation, which awoke doubts in my mind as to the true nature of the case, but as it was late at night when she came to the asylum, and she was tired and exhausted, she had a warm bath and was put to bed, the night attendant being instructed to give her wine and milk if she asked for anything, but not to urge her to take food against her wish. During the night she asked for and swallowed easily a glass of wine and some milk, but refused to take her breakfast. As she still persisted in her story about something being in her throat, before proceeding to administer food, and as a precautionary measure, I passed a probang down the œsophagus. This went easily till on a level with the top of the sternum, when its progress was arrested. Removing the probang the œsophageal tube of a stomach pump was then passed easily to the same point, when it could be felt and heard impinging on some hard foreign substance, apparently a piece of wood. The patient's story thus proved true after all, and I regret to say her prophecy no less so. The knob was found to be so firmly fixed, as was afterwards ascertained, by inflammatory action, that it could neither be pushed downwards into the stomach, nor brought upwards by forceps. After consulting with Drs. Nimmo and Greig, œsophagotomy was decided on as the only means left likely to benefit the patient. This operation was skilfully performed by Dr. Greig, and the foreign body removed, which proved to be the foot of a mahogany tea-caddy, circular in shape, and  $1\frac{1}{4}$  in. in diameter. Scarcely any blood was lost during the operation, but on cutting down on the œsophagus, a large abscess was opened into, which rendered the prognosis very unfavourable, as it indicated the existence of an extensive amount of inflammation. For three days afterwards the patient appeared to progress favourably, but the discharge from the wound now became very offensive, and all attempts to pass an œsophageal tube failed. For a week longer the patient lingered on, her strength appearing to be supported, and all

feelings of hunger and thirst allayed, by strong beef tea and wine enemata, but the gangrenous action continued increasing, and rigors suddenly supervened on the 3rd January, 1875, followed by death on the 4th, at 10.40 p.m.

A complete *post-mortem* examination was refused by the patient's relatives, but the following facts were ascertained next day:—On both sides of the trachea the neck was black and discoloured, and the discharge from the wound very offensive. Behind the trachea where the foreign body had been situated, a cavity existed about the size of a small orange, filled with putrid matter. At the upper part of this cavity the tissues were glued together by inflammation, while at the lower part no inflammatory action appeared to exist, or perhaps, to speak more correctly, the inflammation had given way to gangrene. About an inch of the œsophagus had sloughed, and the lower end was quite open, and through it a tube was easily passed into the stomach.

The chief points of interest in the case are—

1. The close resemblance of the early symptoms to those of ordinary hysterical refusal of food.
2. The fact that, notwithstanding the size of the obstructing body, the patient did swallow a considerable quantity of fluid.
3. The position of the obstructing body being in that part of the œsophagus where organic stricture is chiefly met with.

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## PART II—REVIEWS.

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*Pathological Anatomy of the Nervous Centres.* By EDWARD LONG FOX, M.D., F.R.C.P., &c.

This is a work which was really needed, and now that it has fallen to the lot of a physician in practice in a provincial town to supply our desideratum, and we see how well it has been done, it seems a matter of much surprise that it had not been attempted before by one of our metropolitan pathologists. Not that we think the result would in that case have been any better. Dr. Fox has brought to his work much reading, great care in the selection of his materials, an extended personal experience, and the quality of judicial mindedness in dealing with different theories. The way in which the book is got up is admirable, and the illustrations are most creditable to all concerned. On the whole the arrangement of the materials is clear and systematic, if not

quite scientific in method. The style is condensed, and in many places savours a little too much of the descriptive catalogue; but this was almost unavoidable in the first part of the work. Altogether it is a book which will stand as a landmark as to the state of nervous pathology at the time it was written, and which every one interested in the subject must, as a matter of course, consult.

Dr. Fox divides the book into two parts, the first being a description of the pathological changes found in the nervous centres, without reference to the symptoms present during life at all; and the second treating of the pathological anatomy of the various neuroses separately. In the first division he describes congenital malformations, changes in the vessels, inflammations, degenerations, and tumours, while in the second he treats in succession of the pathological anatomy of delirium, insanity, aphasia, and the neuroses of motility, concluding the book with two chapters, one on the lesion of the spinal cord in small-pox and diabetes, and another on ophthalmoscopy in diseases of the nervous system.

His descriptions of the various kinds of softening of the brain and of the different kinds of sclerosis and grey degeneration are clear, but exception will be taken to many of his positions by those who have devoted much attention to brain pathology, and have had practical acquaintance with the appearances presented by the brain tissue in disease. His apparent adoption of Jaccoud's opinion that red, yellow, and white softenings are mere successive stages of the same process, we think is very misleading indeed. The whole nomenclature of brain softenings is utterly bad, leads to endless confusion, and covers a great amount of complacent ignorance. He adopts the term "cerebral necrosis" to express the ordinary kind of tissue degeneration of the white matter when its blood supply is cut off by embolism. It might be a good enough term if it were strictly limited to that one pathological state, though even then it strikes one as absurd that brain and bones should be tied together in pathological terminology when they die, all the intermediate tissues being excluded. And when we remember that the death of the tissue in the one case is usually the result of acute inflammation, and in the other it is not, it seems objectionable to use the same term to both, and we would recommend Dr. Fox to discontinue its use. We think that he should, in his next edition, insert new and scientific terms for the simpler embolic softening of the white brain matter and of the grey matter of

the convolutions, for the irritative inflammatory softenings, for the hæmorrhagic softening of the grey substance of the convolutions, for the gelatinous softening of both white and grey matter, and for the simple local absorptions of brain substance. Unquestionably a good terminology would help to prevent immense confusion in regard to the whole subject of "softening of the brain." At present some medical men habitually describe to juries and patients anything and everything as softening of the brain that weakens any of its functions, from general paralysis to idiocy.

He thinks that grey degeneration is merely an advanced stage of sclerosis. In this we think he is entirely mistaken. We think there is a kind of grey degeneration that is allied to sclerosis, and another that is totally distinct from it. In the latter we believe that the increase of a greyish tissue is not true neuroglia, but of a soft grey gelatinous stroma whose existence is merely negative and compensatory, the nerve tissue having been absorbed in limited spots. This condition is in no degree allied to true sclerosis at all.

On the whole Dr. Fox's description of the different kinds of sclerosis is the best to be found in any English work. It says, however, but little for the advance of our knowledge in regard to nervous pathology, that we should be content with "softening" and "sclerosis" to express so many different conditions.

His theory of the causation of delirium is thus expressed:—

My own belief is that in all cases delirium is an expression of functional inactivity, or perverted activity, accompanied or caused by deficient blood supply; in anæmia from deficient circulation; in toxæmia from the circulation of the blood, part of which at least is unfit for functional purposes and therefore useless; in hyperæmia, because from the very pressure upon the vessels the due interchange between tissues and nutritive material is rendered abnormally difficult. It stands to reason, therefore, that except in the latter condition the *post mortem* appearances will be few.

In regard to the actual appearances of the brain he is content to deal in generalities, and to quote Calmeil's catalogue of the appearances in 19 cases of acute delirium accompanying periencephalitis in insidious forms. Now if there is one thing more confusing to ordinary minds than another, it is those catalogues of the morbid appearances found in a certain number of cases of an obscure disease. They are only fit for the original records or a book of reference, and should

never be quoted in this form in any book that the author wishes to be read through.

Dr. Fox is decidedly of opinion that delirium tremens is not caused by the deprivation of alcohol. He says that atrophy of the convolutions from insufficient nourishment by the alcoholised blood is one of the most common appearances in those dying of this disease. "The increased excretions of carbonic acid which accompanies digestion is considerably checked by the use of spirits. The constant diminution in carbonic acid secreted gradually causes a sure augmentation of carbon in the blood. This carbonaceous blood, unfit for the nutrition of any organ, is especially unfit for the due performance of those regulated conditions of osmosis in so fatty an organ as the brain." Such is the opinion adopted by the author as to the causes of the brain atrophy and delirium. To many it will be a new idea that such an organ as the brain should undergo atrophy in a few days, but we believe such a change is quite possible. Probably all nutritive changes can take place more quickly in the brain than in any other organ in the body, and we know how soon the liver can shrink in acute atrophy.

In treating of insanity, Dr. Fox recognises at least four conditions that might induce it, and yet leave little or no change after death. These are (1) blood conditions, *e.g.*, uræmia, spanæmia, phthisis, &c.; (2) variations in blood supply, (3) reflex irritation, and (4) shock. It is possible to imagine each of those causing purely "functional" disorder of the brain, but it is quite as realizable that each of them may cause cell-degeneration and cell-atrophy, which by improved modes of examination may be detected after death. We have much more hope of brain disorders from such causes as these revealing their pathological anatomy to us, than such psychical abnormalities as are often seen in the case of persons highly predisposed hereditarily to insanity, *e.g.*, a short attack of mania lasting for twenty-four hours and then disappearing suddenly. One hour this man is a raving lunatic, without coherence of speech, without memory, without power of attention, without love for wife or child, without appetite or passion, and without power of rest in sleep; the next he is a man again, in all the glory of intellect and emotion, and in all the enjoyments of animal life. Or to take a still more remarkable case which we have seen. A man who had been acutely maniacal for months, suddenly came to his senses one evening, was coherent and sane, asked

most affectionately for his wife and children, felt wearied and tired, and went off to sleep, but woke up again maniacal, and passed into dementia, never again to have the veil lifted off his higher powers of mind and emotion. Or take a man sane on all points except one gross and preposterous delusion. Such cases seem more and more puzzling the more one thinks about them from the pathological point of view. Dr. Fox takes rather an unfortunate example of how an organic change may arise in the brain. He says that Dr. Thompson has demonstrated by sphygmographic tracings that in general paralysis there is persistent spasm of the vessels in the very early stages, and from this he concludes that this spasm could be detected before any brain changes or psychical symptoms appeared, and that Calabar bean, if given then, would probably cure the spasm, and stop the paralysis. Now we fear most persons who have seen much of the disease would question the significance, if not the correctness, of the tracings, would assert that in the pre-paralytic stages of the disease there was no sort of arterial abnormality, would deny the vascular origin of the disease *in toto*, and would scout the notion of the Calabar bean doing any good at all in any stage.

The author then enumerates the appearances, naked eye and microscopic, that other observers have found in the brain in insanity, and we are obliged to say that the general impression produced by the perusal of this part of the book is not that of luminousness, or satisfactory deductions from the facts, or any great clearing up of opposing views. Possibly this results from the present half-way stage in which the whole subject lies, but it would have been pleasant and satisfactory to have got some few general deductions, or, at all events, some unequivocal sign-posts pointing to main roads in the midst of the meshwork of crossing paths and lanes leading nowhere. That is surely what we have a right to expect when a man sits calmly down and maps out a country for us in a systematic treatise.

When he gets to aphasia, our author evidently gets to better known ground, and his description of glosso-laryngeal paralysis is exceedingly good. Definiteness in the pathological anatomy of the neuroses reaches its climax in locomotor ataxy, and then begins gradually to wane, through progressive muscular atrophy, infantile paralysis, and paralysis agitans, until we get to a region of great obscurity again in epilepsy and chorea.

*On Paralysis from Brain Disease in its Common Forms.* By  
H. CHARLTON BASTIAN, M.A., M.D., F.R.S., &c.

This book consists of eight lectures to Students, and it would be a good thing if all such lectures were as clear, as systematic, and as interesting as these are. When will lecturers to students learn that the amount of information given is of much less importance than the kind, and the way it is presented? Dr. Bastian's book is of interest, not only to students, but to all who make nervous diseases a study. We think that those whose practice lies chiefly among the insane should, on principle, read, or re-read, a good book on motor affections every six months. The problems discussed are so much simpler than the neuro-mental ones; the pathology is so much more definite and regional; while the analogies are so striking to any thoughtful physician that the perusal of such a book induces a more scientific and logical state of mind for the elucidation of the more difficult questions of mental paralysis, mental convulsion, and the absence of mental co-ordinations.

Dr. Bastian first shortly discusses the blood supply of the different parts of the brain. This is a subject that is equally interesting, and equally important, to the alienist. He makes one statement as the result of his own observations, that the perivascular canals in the corpus striatum are three times as large as the blood vessels which lie in them. Surely the cases examined were those of interstitial atrophy, or Dr. Bastian is talking of the empty and contracted vessels. That the holes in the healthy brain substance through which the full arteries pass during life are three times the size of the vessels is certainly not the case, and such a statement must have given a most wrong impression to the students who heard it.

The great frequency of meningeal hemorrhage, as compared with any other kind, is pointed out. Among the insane, both in the acute and chronic cases of the disease, the relative frequency of meningeal hemorrhage is still more marked. It is, in fact, one of the most common of all the lesions found, though it seldom goes on to any great extent, or seems to produce many symptoms during life. It is, in fact, much more a symptom and indication of certain states of atrophy of the brain, leaving the vessels very much unsupported, or of disease of the vessels, or, in the acute cases, of an intense pathological condition in which a certain kind of stasis of the blood in the capillaries and smaller

vessels is a chief symptom. The rusty spots so often seen on the inside of the dura mater, or on the false membranes that occur under the dura mater, are nothing but apoplexies. The small deposits of blood-colouring matter seen in all sections of brain in acute insanity have resulted from the same cause. The reddish discoloration of the sub-arachnoid fluid we so often meet with in insanity is due, of course, to ruptures of minute vessels in the pia-mater. Who that has made many post-mortem examinations among the insane does not know the tortuous and varicose vessels of the pia-mater in many chronic cases? They are, no doubt, the preliminary stage of the apoplectic state, actual rupture not taking place at all when their coats remain healthy, or no unusual strain is put on them. In examining sections of the brain in chronic insanity we have been often exceedingly struck by the immense amount of blood-colouring matter scattered about. Apoplexies of various kinds, therefore, are an important element in the pathology of insanity.

A fact noted by Dr. Bastian it is well for those who have to explain the occurrence of insanity pathologically to keep in mind, viz., that ramollissement from embolism, or thrombosis, may take place in a few days. We have no doubt that this is so, but it is well to remember along with this fact that there are kinds of white softening that don't result from embolism at all, and take very much longer than a few days for their production. We mean the kinds of softening seen as the result of the irritation of spiculæ of bone and of syphilitic deposits, and that nearly always form the outer boundary of red and grey softenings. The irritative and the embolismic white softenings are often indistinguishable to the naked eye, but they are very different things pathologically.

Dr. Bastian thinks that hemiplegia is not a very hereditary disease, but he produces no statistics in support of his view. We think that in this opinion he is wrong, but as we have no statistics on our side either, it must remain a case of difference of opinion. He divides hemiplegia in its onset into the apoplectic, the epileptiform, and the simple. He thinks that spasm of the vessels plays an important part in the production of transient hemiplegia. To substantiate the theory, can any analogous, irregular and local spasm of vessels be pointed out elsewhere in the body lasting so long as to produce such an effect? Surely the vessels of the brain are not the only arteries that manifest this extraordinary power. And yet we have seen, as a matter of fact, one of the large branches of

the anterior cerebral artery quite empty and much contracted, with no obstruction to its calibre whatever, and the part of the anterior lobe supplied by it in a state of commencing ramollissement.

In treating of the alterations in the nutrition of parts suffering from hemiplegia, he directs attention to acute sloughing, which is an affection not uncommon in general paralysis also. He also refers to the various secondary degenerations in the cord and brain that follow the original lesion by a species of pathological propagation. A study of those we consider most important to all men who have to do with the pathology of insanity. We consider general paralysis to consist in such a propagation from the convolutions, and we have met with many cases of chronic insanity that ended in degeneration of the cord, with paraplegia and trophic changes.

The chapter on "Regional Diagnosis in Brain Diseases" is well worth study, and has been compiled with much care. Dr. Bastian inclines, doubtfully, to the opinion that affection of the posterior lobes is more apt to be accompanied by mental impairment than that of the anterior. He says that affections of the cortical grey matter are apt to be attended with slight, and often indefinite, paralysis; but have a frequent association with mental changes and convulsions, an absence of loss of sensibility and of any notable elevation of temperature on the paralysed side.

We are struck with the small prominence given to the mental symptoms throughout in Dr. Bastian's treatment of hemiplegia. Who ever saw a patient labouring under the disease, or one who had ever laboured under it, with a good mental capacity, or very much self-control?

We believe that as our knowledge of the brain-changes that occur in general paralysis is increased, we shall have much light thrown too on the motor functions of the brain. The slight hemiplegia that so often occurs in this disease, first on one side and then on the other, is always to us a most interesting problem in disease.

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### PART III.—PSYCHOLOGICAL RETROSPECT.

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#### 1. *Asylum Reports for 1874.*

Medical details are conspicuous by their absence from the great majority of the reports for this year, and it is well that it should be so, though the reviewer is thereby deprived of material of which he could take notice. Were the members of the *Medico-Psychological Association* appealed to for their opinion as to the proper method of writing an asylum report, we are quite certain that each superintendent would contend, did modesty not forbid, that his own method is the best on the whole. The gentleman who writes one so short that it could easily be compressed into a page of note-paper might justly urge that there is no use in repeating in a report what the magistrates already know; and he would have much truth on his side. But another gentleman may consider himself an adept at writing the Queen's English, and may take the occasion of his annual report to set forth the results of the year's management in an effective manner. The report may then be of local value, although it cannot have much general interest.

Now, even as one asylum differs from another in its size and structural arrangements; as one report differs from another in the size of the page and the colour of the cover; and as one superintendent differs from another not more in his physical than in his mental characteristics, so must we expect as great a variety in the method of recording the year's work. In noticing each report, therefore, it is necessary for the reviewer to change his style of treatment; grave or gay as the occasion may require, but never ill-natured.

BEDFORD, HERTFORD, AND HUNTINGDON.—Mr. Denne having tendered his resignation as Superintendent, the magistrates voted him an annuity of £500, expressing, at the same time, in the most handsome manner, their sympathy with him on account of his failing health, and recording their high appreciation of his past services. Although there is a good supply of books, the Commissioners report that no newspapers of any kind are taken in. Experience proves that patients prefer newspapers to all other forms of literature.

Mr. Swain, the new superintendent, reports that much attention is devoted to amusements, and adds:—"Entertainments have a further value in bringing together and making the staff acquainted with each other. Thus is established that *esprit de corps* which is so necessary where all are working for one common object." Under such circumstances it will require care and rigid discipline to avoid troubles ensuing.

BIRMINGHAM.—We quite agree with Mr. Green when he reports:—"It is much to be regretted that the Relieving Officers do not exercise

a little more care in filling up the statement accompanying the order of admission, especially as regards the cause of the malady, for the successful treatment of insanity, like that of all other disease, depends very much upon having a correct history of each case." But no man believes, without full inquiry, the information contained in the statement and supplied by the relieving officer. We have always maintained that the medical officer should give the necessary information about admissions, to be supplemented by what can be learned by the asylum physician from those best able to afford it.

A patient had her leg amputated for disease of the knee joint. "She was an epileptic, and it is worthy of note that the fits were completely arrested by the disease in the knee, and have not returned since the removal of the limb. She has had no fit since June, 1872." Fuller information might be given of this interesting case in a report in "Clinical Notes and Cases."

CAMBRIDGE.—The Committee of this asylum have been obliged to "consider the accommodation now provided in the asylum for the patients in confinement there, and to report whether any, and if so, how much, additional accommodation should be provided by building or otherwise to meet the requirements of the establishment." It is with much pleasure that we observe that Dr. Bacon opposed the proposition of sending patients suffering under chronic lunacy to the Workhouses of Unions willing to receive them. He certified that only twelve cases might be so treated. It would have been still better if he had certified none. It is most desirable that chronic and harmless cases be handed over to the charge of their relatives; but experience clearly proves that workhouses are not the proper places for lunatics of any kind.

The Commissioners have again to complain that their repeated recommendations, that an assistant medical officer be appointed, are still ignored.

CUMBERLAND AND WESTMORELAND.—Dr. Campbell considers the arrangements for extinguishing a fire equal to such an emergency. We are glad to hear it, and he must be one of the happiest of men; for it cannot be denied that in the large majority of asylums, if fire once got a good hold of the building, the whole of it would perish, the provisions for such an accident being generally altogether defective.

It is stated that "in accordance with the regulation of the asylum" an examination was made in every case of death. The subject of compulsory *post-mortem* examinations is a very troublesome one, not to say dangerous. Have the Visiting Justices power to make such a rule? Would their authority protect a medical officer from a criminal prosecution or an action in a civil court? What would be the result if a rule to this effect, made by the Visitors, and sanctioned by the Home Secretary, according to the statute, was carried out by the

Superintendent against the wishes of relations, and he prosecuted by them for obeying a resolution which the Act says he must carry out? We only hope that this point won't be settled at Dr. Campbell's expense.

DEVON.—Extensive structural improvements are in progress; a chapel, sanatorium, and rooms for female patients are being built. £12,000 are to be expended on these structures, and this sum does not include what must be required to furnish the new buildings.

“ The unfavourable character of the cases admitted may be judged from the fact that at the end of the year only 26 patients in the asylum were deemed curable, which is rather less than four per cent. of the numbers then under care and treatment. There appears to be a growing disposition to send a class of cases to the asylum who in former years would have been kept at home or in workhouses. When some years since the cost of maintenance of lunatic patients was transferred from the individual parishes to the common fund of the Union, a perceptible increase in the number of patients was observed, and at the present time the allowance of four shillings a week from the Consolidated Fund for their maintenance appears to have a similar effect, as a chronic harmless lunatic can be kept almost as cheaply in the asylum as the workhouse, and the Union Authorities are relieved of a class of patients who undoubtedly entail an additional amount of care and responsibility if kept in workhouses. It is feared that the effect will be to rapidly fill our asylums beyond the provisions made for the *cure and treatment* of patients of an acute class, and the custody of such as cannot be properly cared for out of an asylum.”

In several of this year's reports a paragraph of a similar nature appears. We contend that a case of chronic insanity is as legitimate a subject for care and treatment as an acute one. If our asylums are not large or numerous enough, the remedy is obvious; but do not hand over poor, helpless, demented creatures to the tender mercies of workhouse officials. The only improvement which can be effected in the treatment of such cases is to transfer them to the care of their friends, and even then it is necessary that they should be under official supervision as is the case in Scotland, where the Deputy Commissioners in Lunacy periodically visit and report upon them.

Out of only 159 admissions no fewer than three were found to be not insane.

GLOUCESTER.—We cannot find any contribution by the Superintendent, Mr. Toller, to this report, unless, perhaps, the statistical tables. The Visiting Justices object strongly, and in our opinion justly, to criminal lunatics being placed under their care in the County Asylum.

GLAMORGAN.—In the report read at Quarter Sessions the Visitors state that they, “ feeling very strongly that their asylum is an hospital for the curative treatment of the insane, are doing all they can

to reduce the number of the patients by the removal of those who may be safely taken care of by their friends, but as they cannot control the admissions, and have now only three vacant beds on the female side, they urgently press on the Justices the necessity of some early action being taken for the care of idiots and others who [do] not require the vigilance and expensive treatment of an asylum." We most sincerely hope that Dr. Pringle will oppose with all his might any proposition to place idiots, &c., in workhouses.

There is nothing further calling for remark except that a Turkish bath has been in use for some time, but that no opinion can yet be expressed as to the benefits likely to follow its employment.

CARMARTHEN.—The supervision of epileptics is to be improved by converting certain dormitories into wards for facility of night inspection. Heart disease appears to be extraordinarily frequent among the patients in this asylum. Dr. Header informed the Commissioners that nearly one-half of the admissions were so affected.

If the overcrowding of asylums is to be relieved by the removal of patients to reside in private houses, especially if to board with strangers, it is quite evident that such cases must be under much better official supervision. In connection with this subject the following paragraph is not satisfactory. The Commissioners remark :—

"It appears that in the counties of Carmarthen, Cardigan, and Pembroke, more than half of the insane population are dealt with as single pauper patients, and placed either with their relatives or strangers, the parish allowance being often quite inadequate for their proper care and maintenance. Patients of this class are stated by Dr. Header not only to be frequently admitted here in a filthy and neglected state, but that they are also thoroughly unfit for treatment out of an asylum. From the annual return for the year 1873 of lunatics chargeable to Unions in the three counties, it appears that while 29 only were in workhouses, as many as 427 were boarded out with their friends or others. This subject is of such importance that we beg to bring it before the Visitors in this report, in the hope that in their several districts they will cause inquiry to be made into the condition of this class, and procure the removal to this asylum of such individuals as may be unfit subjects to remain in their present charge."

If it be granted that the patients referred to by the Commissioners require improved supervision, and we admit it readily, it may be feared that the official suggestion is insufficient for the object desired. Can we expect the Visitors to hunt up cases which require to be sent to an asylum? It is very doubtful whether they will be induced to take the necessary trouble?

HEREFORD.—In his report Dr. Chapman states :—"The proportion of pauper insane to the population is greater in Herefordshire than in any county in Great Britain, and possibly this is due to some extent

to a greater tendency to insanity in the county; but its principal cause is that the insane of this county have been more fully detected and registered. The proportion in Herefordshire is 3·2 per 1000, and it varies in other counties to as low as 1·2. In Hereford the total increase of pauper lunatics from December, 1861 (1868?) to December, 1873, a period of five years, was only 8, viz., from 413 (231 in asylums, 182 out of asylums) to 421 (243 in asylums, 178 out). These figures somewhat exaggerate the truth, as December, 1868, came at the end of a period of somewhat rapid increase in the numbers, due probably to the Union Chargeability Act; and the year 1873 showed a remarkable diminution in the number of patients out of asylums, viz., from 207 to 178, partly due to an increase of 14 in the asylum, but chiefly probably to a diminution of pauperism, in consequence of the higher wages ruling. On the other hand, those counties having less than two pauper lunatics per 1000 of population show a rapid increase. All are tending under the present methods of treating the insane, or rather perhaps under the present standard of what constitutes insanity, to some such ratio as 4 per 1000; but the later steps of the accumulation progress much more slowly than the earlier."

This asylum has an unusually low death rate, viz., 8·36 per cent. on the average number resident. Dr. Chapman is able to report that "during the year there has been no death from phthisis, nor is there any case of the disease in the house. *Post-mortem* examinations were made in all cases of death, and no tubercular disease was found except in one case, that of a man who died from general paralysis of the insane two months after admission. . . . Some cases of phthisis might fairly have been expected among the admissions, but although it so happened that there were none, phthisis so commonly originates among the patients in asylums that there is good ground to suppose that this immunity may reasonably be ascribed to the original capabilities of the building and to the care bestowed on hygienic measures in the management of the asylum."

CORNWALL.—At least two, probably three, patients were suffocated during the night by turning on their faces during fits. The Commissioners accordingly recommend that all epileptics be under constant supervision at night.

In this, as in many other asylums, special attention appears to be now devoted to the cultivation of music among the officers and patients. This is much to be commended.

BETHLEM HOSPITAL.—The Appendix of this report is medical. In it the information contained in the statistical tables is extended, but "it is not proposed in it to exhaust the interest of the cases, nor to do more than glance at our endeavours to verify the observations of others, and record some original investigations." The notes are so short and deal with such a variety of subjects that it is impossible to make an intelligible abstract thereof; but we have no doubt that if

Dr. Williams and his colleagues will take the trouble to work up these notes and publish the results in the "Journal," we shall be indebted to them for some very interesting information.

CHESTER.—The Committee reports that its attention has been directed to the providing of a sufficient water supply in the case of fire. In the meantime it has been deemed advisable to increase the insurance on the building.

The mortality was remarkably low last year. On this subject Dr. Davidson remarks:—"The number of deaths which occurred in the course of the year was 32 males and 11 females, or 21 deaths fewer than in the previous twelve months. The difference in the mortality of the sexes is very marked, and may be accounted for by the fact that the mental derangement among the men is more frequently complicated with grave bodily diseases,—the women enjoying a comparative immunity from the ravages of general paralysis of the insane. It is gratifying to be able to report that the death-rate for the bygone year has been lower than for several consecutive years; the proportion being 9·8 per cent. on the average number resident, and 7 per cent. on the total number under treatment." Of the deaths, 17 were due to general paralysis, 7 to epilepsy, and 5 to phthisis pulmonalis.

The suicidal and epileptic cases are placed in a large special dormitory for each sex. Dr. Davidson is strongly in favour of such an arrangement:—"Now that we have had experience of the system of special night supervision for a period of nearly three years, I take the present opportunity of stating that I have found it fraught with great benefit to the patients of the character above mentioned, and that I cannot too strongly commend it. In fact, since the introduction of the system here there has not been a single instance of a patient dying in an epileptic fit during the night."

BUCKINGHAM.—The night supervision of epileptic and suicidal cases is here also receiving attention. The present arrangements are not perfect, but are provisional and better than none.

The Chaplain's report contains the following passage:—"There are, however, some patients (and their number seems to be on the increase) who cannot get rid of the distressing idea that they have committed 'the unpardonable sin,' and that for them there is no forgiveness—their fear of punishment being confined to this world, and not extending to the future. Of these a few are ever seeking and watching for an opportunity of self-destruction, and require constant supervision. These cases, to which my attention has been kindly called by the Medical Superintendent, I have made my especial study; and though they are very difficult ones to deal with, and my ministrations are apparently disregarded, still I trust God's blessing may rest on my labours, and that 'the word' in season 'may not return unto Him void.'"

Now we greatly fear that these well-meant efforts of the worthy

clergyman are entirely misdirected. In our opinion such cases would have the best chance of recovery if all religious reading and discussion were avoided entirely, and the thoughts directed into other channels by means of occupation, amusement, &c.; medical treatment, at the same time, receiving the greatest attention.

LEICESTER (BOROUGH).—An excellent feature in this report is the Meteorological Table. We think it is very desirable that in all asylums meteorological observations should be made and recorded. No doubt, to do this is no light task; but we think that the results would amply reward the trouble expended.

LEICESTER AND RUTLAND.—In this asylum also increased precautions have been taken for the protection of the building and inmates from fire. The Committee of Visitors consulted the well-known Captain Shaw, who submitted a report. His suggestions are now being carried out, at an estimated cost of £2000.

Mr. Buck, the Medical Superintendent, reports that “during the past year seven cases have been received from the county gaol, and they have been a source of considerable anxiety and difficulty in the management of the asylum. They often make daring attempts to escape, they are unruly and destructive, and, unlike ordinary patients, they often conspire, either amongst themselves or with other patients, for improper purposes. It is impossible to exaggerate the discouraging influences which result from the introduction of criminal patients into the ordinary wards of a county asylum.” This is a distinct grievance which it would be well that the Association take into consideration. The remedy for the evil is not at once evident.

LANCASHIRE (PRESTWICH).—From Mr. Ley’s admirable report we make the following extract because it clearly indicates a great abuse and proves how injurious, in every way, is the custom of sending cases of insanity to the lunatic wards of a workhouse.

“The majority of those who recovered were suffering at the time of their entering the asylum from the more active forms of mental disease, such as acute mania, which always furnishes a large proportion of cures, owing probably to the fact that friends, frightened by the violence of the symptoms, are glad to get rid of their insane relatives; the Union authorities find them too troublesome or too expensive to manage, and consequently they are sent at an early period of the disease to the asylum, and are there treated with the best results. There are other forms of mental disease as curable in the earlier stages as acute mania, but in these instances, as no very great extravagance of manner and conduct marks the progress of the malady, the patients are kept at home or detained in workhouses without proper treatment, and are only brought to the asylum when the curative stage is passed, and restoration is out of the question. The practice current in this county of passing all the insane through the different workhouses has often been commented upon, and though in

certain Unions there has been some amendment during the past year, yet cases generally are unnecessarily delayed in their passage to the asylum, and many in the end are only brought here because they become so troublesome as to make their removal desirable. At the risk of seeming repetition, I venture again to protest against a practice which is both unwise and injudicious, and which probably more than is known has tended to rear up that store of chronic lunacy which taxes so heavily the ratepayers of this county. There are certain Unions unprovided with lunatic wards to their workhouses, which send all their lunatics to the asylum; others, again, have lunatic accommodation, and divide their patients between the asylum and workhouse, sending to the former the unmanageable, and retaining the more tractable in their own workhouses; there is a third class which retain all their lunatics, and never, except on compulsion, send patients to the asylum. Workhouses of the latter class are therefore asylums, but the insane therein are admitted by no order of magistrate, and are detained without that supervision and special control which are the safeguards of asylums. In no view, save in the doubtful one of economy, can this practice be defended. It is said that the insane in workhouses are maintained at a lower rate than in asylums, but a trustworthy statement of the comparative cost is difficult to obtain, because in workhouses the accounts are so kept that no distinction is made between the expenditure for the young and the old, the sane and the insane residents; and, again, no fair comparison can be made, because in asylums there are all classes of lunatics, the noisy and the destructive, the dirty and the dangerous, the paralysed and the sick, and wherever these classes are accommodated, their treatment, entailing as it does certain requisites which cannot be dispensed with, must necessarily be more costly than the maintenance of an equal number of the class of lunatics usually retained in workhouses. It was thought that the aid afforded by Government towards the maintenance of all pauper lunatics now confined in county and borough asylums would remove whatever inducements in a pecuniary sense there might be in favour of retaining the insane in workhouses, and would expedite the prompt removal of all cases of recent insanity to the asylum. Such, however, has not been the experience of this asylum. If we may judge from the admissions of the last three months since the grant has been in operation, the tendency seems to have been not to send recent cases, but to clear out of the workhouses all the chronic insane. Of the patients admitted in October, November, and December in the past year, only 19 were recent cases, the remaining 75 were incurable, 26 were helpless and paralysed, 9 were epileptic, and only 21 of the entire numbers have been able to employ themselves."

We most cordially agree with all Mr. Ley says, and would strongly urge him to move in the matter. He has certainly got a most excellent subject to work at. By extending his inquiries to other

counties and working up his results, he cannot fail to expose the magnitude of the evil, and that is the first step in rectifying it.

Mr. Ley proposes that the epileptic patients at present in the various Lancashire Asylums should be placed in a special institution. He says :—

“ From the returns of the Clerks to the Boards of Guardians, it would appear that up to the end of last year there were 6000 pauper lunatics in this county, and that the increase for the past three years has been at the rate of nearly 200 per annum. A very large proportion of the total number are hopelessly insane, and of the present inmates of this asylum not more than 7 per cent. can with any confidence be pronounced curable. To deal with this steadily increasing mass of lunacy is a problem which as time goes on becomes by its magnitude more and more difficult of solution. To build asylums furnished with every requisite that experience and science have proved essential to the proper treatment of lunacy, and to fill these asylums as soon as they are built with incurables, is enormously expensive, without being satisfactory. There can be no doubt that the only way of checking the growth of lunacy is by treating, in properly organised hospitals, the recent cases as they occur, and that cannot be effectively done until our present asylums are eased of the dead weight of chronic insanity which fills their wards and hampers their curative powers. The experiment of drafting the chronic cases to the lunatic wards attached to workhouses has been extensively tried in this and other counties, and has been found to work most unsatisfactorily. The idea of providing for the same class in separate institutions or in asylums for incurables has been condemned by all competent authorities, and to repeat in Lancashire the experiment tried in Middlesex of establishing imbecile asylums would require special legislation. To meet the difficulty, I venture to suggest that a very great if not a permanent relief to the overcrowded condition of our asylums might be gained by an extension of the plan first adopted in this asylum, of providing separate accommodation in a distinct hospital for epileptic patients. This institution was the first among English asylums to recognise the importance of having special accommodation and separate treatment for patients of that class, and tested by the experience of years, there can be no doubt that both as regards the comfort of the other inmates, as well as the safety and well-being of the epileptics themselves, the special arrangements introduced by Mr. Holland, have borne results which have amply justified the wisdom of the course pursued. Epilepsy is a distinct disease, and epileptics are a class by themselves; when accommodation in wards set apart for their use, as in this asylum, is not provided for them, their presence among the other inmates is not conducive either to their own benefit or the benefit of others. The Commissioners in Lunacy warmly advocated the establishment in all asylums of separate provision for these unfortunates. Why should not this provision take the form of a

separate asylum for their care and treatment? At the lowest computation there must be nearly 400 epileptics confined in the different asylums of this county. Every year adds to their number. If these were provided for in an institution organised and furnished with all the modern appliances for their treatment, they would be placed under the most favourable circumstances as regards the cure or the mitigation of their terrible malady, and the withdrawal from the existing asylums of so many patients, by creating vacancies, would evade for a time at least the difficulties which now surround the treatment of recent insanity."

One objection to Mr. Ley's proposal which will, no doubt, be made, is, that in having a separate asylum for epileptics we would really have an institution for one form of incurable cases.

Most reports make reference to the part which intemperance plays in the production of insanity. The time must be drawing near when this horrible vice will be combatted in a more efficient and earnest manner than in time past. No one can deny that drunkenness is the great sin of this country, and that to its influence a very large proportion of insanity must be more or less directly attributed. The experience at Prestwich is, unfortunately, not peculiar. Mr. Ley states:—

"In the admissions of the past year, although intemperance figures largely in the table of causation, it is probable that its influence as a producing agent of mental disease has been under estimated. The extent to which it has acted as an immediate cause of the malady can only partially be arrived at, as many of the admissions are brought and left at the asylum without any history, and in these and other instances the cause of the mental disease has to be determined from the character and form which the malady assumes. [How is that done?] But even if all doubtful cases are excluded from our calculations, there still remains a large percentage both of males and females in whom intemperance, if not the sole cause of the insanity, was a most important auxiliary. The greatest number of admissions in this asylum always occur during the month or six weeks following the Lancashire Carnival, Whit-week. In the month of June last year no less than seventeen males and four females were admitted suffering from mania, induced by excessive and persistent drinking. Of these, four had attempted suicide, and had extensive wounds of the throat on admission. These instances of the direct effect of intemperance occurred with scarcely an exception among a class who were in receipt of good wages from regular employment, and who therefore had not the excuse of the half-starved and ill-clad poor. There is no disguising the fact, that among the labouring classes insanity has of late years increased by a reckless course of inebriety, favoured in a great measure by a plethora of money and an abundance of leisure. In Lancashire, as probably elsewhere, high wages and short hours of work have not been by any means an unmixed benefit to the recipients.

More money has been available for the purchase of drink, and more drink, as a natural consequence, has induced greater physical and moral deterioration."

We conclude our extracts from this admirable report by the following :—

"Nobody, however, with any practical knowledge of the want of a hospital for the insane will question the propriety of having everything connected with it in the highest state of efficiency. Upon the good order of the establishment and the perfection of its arrangements much depends, and it is now a recognised fact, confirmed by daily observation, that the best arrangements are invariably the cheapest, and that a judicious liberality in all that pertains to the treatment and government of the insane is, in the long run, the truest economy."

LANCASHIRE (RAINHILL).—In their official report the Commissioners direct attention to the system of night-watching in use in this asylum. They say :—

"The system of night attendance here differs from that in most county asylums. The attendants are not specially and exclusively appointed for this duty, but are taken from the ordinary body, and perform the work for a period of two months, when they are replaced by others selected in rotation. In our opinion, the very difficult and responsible duties of night watching cannot be satisfactorily executed in this manner. It is evident that with a staff liable to such frequent changes, attendants quite new to these duties must very frequently be appointed, instead of the work being performed by the most trustworthy persons who can be obtained. We strongly recommend this matter for consideration, and we also recommend that Dent's Tell-tale Clocks be introduced. At present there is no security that night rounds are duly made. But, for the full security of patients suffering from epilepsy and suicidal mania, we think that no occasional visit is sufficient, and that the only safe system is to place such cases in separate wards, properly arranged for complete supervision, and to appoint special night attendants to watch them, having no other duties."

In his very short report, Mr. Rogers is able to state that the past year was a singularly uneventful one so far as accidents were concerned.

The Commissioners and the Medical Superintendent are at variance as to the use of seclusion. The former say that "they would be glad if some means could be found for reducing the number of instances and their duration. Exclusive of the large number of patients who are entered under this head for medical or surgical reasons only, 63 patients of each sex are recorded as having since the last visit been secluded for maniacal or epileptic excitement, or for acts of violence and insubordination." To this Mr. Rogers replies that "every patient is, as far as possible, treated individually, both in a moral and medical sense, and if in this treatment the element of

seclusion, by which is meant treatment of one patient separately and apart from others, enters more largely into the system than accords with official views on the subject, he can at least refer to results as justifying his own views, and can assure the Committee that seclusion, so far from being used in a routine manner, is only employed upon a deliberate conviction of its desirability in every individual case."

ARGYLL AND BUTE.—This is one of the pet asylums of the Scotch Commissioners. All the favourite ideas of the Scotch Board have been carried out there; airing-court walls have been pulled down; and all the patients are turned out to work on the farm. At a meeting of the magistrates a few weeks ago, the Asylum Committee were impeached for mismanagement, though from the account of the meeting which appeared in the "*Glasgow Herald*" we would conclude that the Committee made a successful defence. The affairs of this much-lauded asylum have formed the subject of considerable discussion by Scotch Superintendents. We therefore hope that next year's report will be a very full one, especially regarding the dietary lately in use. It is very well known that at another Scotch District Asylum the patients were, in the opinion of the Commissioners, under-fed, although they really received a larger allowance of the chief articles of food than in the Argyll Asylum, where "the food served during the visit was of good quality, abundant, and prepared with care. All the butcher meat used is, with the exception of a small quantity of Australian mutton, killed on the farm, and the supply is thus not limited to necks, houghs, and heads, but includes the finest cuts. In the supplies to the house, the heads, feet, and internal organs are not counted, and do not appear in the cost of consumption, consequently the meat supply may be reckoned at about a fifth more than appears in the accounts." In such an important matter as the dietary of patients, whatever goes in as extras should be estimated and stated accurately. It is not right that a scale of diet should be departed from without the addition or diminution being distinctly stated.

SALOP AND MONTGOMERY.—Dr. Strange is one of the few Medical Superintendents who object to the use of special dormitories for epileptics and suicidal patients. As a rule the plan has been found to work so well that we are forced to the conclusion that he would find it equally satisfactory were he to overcome the structural and other difficulties which appear to stand in his way. In an asylum with only two night attendants on each side, we consider it a less evil to leave a sick patient for half an hour than to leave thirty or forty epileptics and suicidal cases for the same period. In the one case, the patient can only complete the process of dying; in the other, death may be self-inflicted or result from accidental suffocation. It is not at all necessary for the sick to sleep in the special dormitory. They can easily be attended by the attendant who "makes the round of the house;" and where a patient is on the very point of death, and

the attendant must begin his visit to the various dormitories, another attendant can easily be called up. We have had ample experience of this system and find it to answer admirably. However, we shall allow Dr. Strange to state his own views on the subject, and it is always well to have an important subject discussed from all points of view.

“ With regard to the suggestions strongly urged by the Commissioners, both at their official visit, and after the sudden death of an epileptic during the night, that all this class of patients should be placed together at night, I think that as it has been carried out in this asylum, so far as is practicable (entirely on the female side, but owing to the dormitories being smaller not quite in its entirety in the male division), I may now venture, after the experience of eight months of this system, to state what are in my opinion its advantages, and what its disadvantages, in an asylum of this size, where there are only two night attendants in each division. The advantages are easily summed up, viz., the possible prevention of death by suffocation in epileptics; I confess I can see no other. The disadvantages are more numerous. However great the gain, by the fact that we may (*occasionally*) prevent an epileptic dying when no one is present, I think the congregating together of a mass of epileptic patients, varying in every degree in their forms of insanity; some quiet, clean and fairly rational; at the other extreme, noisy, dirty, demented, or idiotic—for without special construction this cannot be avoided—is open to objection. But the disadvantages are not confined to the epileptics alone, and are far greater as regards the other patients, who have for their safety to sleep in the same ward. As this is the only room in which a night attendant is constantly present, it follows that recent and suicidal cases, the sick and infirm, have also to sleep in this gallery; and although some amount of classification is certainly possible, yet the fact remains that quiet, clean patients who are supposed to be suicidal, are obliged to sleep in the same room with the worst class that the asylum contains. Previous to this new arrangement, the second night attendant remained in the infirmary, and had special charge of the sick, and never left serious cases of illness; now such of these as are unable, from one cause or another, to be taken up stairs to the epileptic gallery are only visited at intervals, or, in severe cases, a special attendant has to be placed on duty. If the liability of epileptics being found dead is reduced, on the other hand there is the possibility that some of the hospital cases may be so found; and this has happened in this asylum, since the change has taken place. The distress of moving infirmary cases from their own warm room to a colder atmosphere in another gallery is very great to them, and also a great strain upon the attendants. Not only this, but it frequently happens that an epileptic having severe fits, or being in such a prostrate condition from the effect of fits, is not in a condition to be removed from her day-ward to the epileptic gallery—a

special night nurse has to be placed on duty to take charge of the case. This is actually happening while I write these lines, and thus the very object for which the plan was adopted is defeated. Under this arrangement patients have to be taken from their own wards at bedtime, often a considerable distance, to sleep in this epileptic gallery: it follows that the patients in the day-ward belonging to this gallery have to be sent to fill up the vacancies so caused; and thus the sleeping arrangements of this asylum—not at any time of the best—are rendered very complicated, and when the time for rising in the morning comes the nurses have to leave their wards to fetch their respective patients from the epileptic gallery.

“I have endeavoured to state facts quite fairly, and as I unhesitatingly accepted the suggestions of the Commissioners in the matter, and have ever since carried them out as far as practicable, I feel that I am justified in stating my experience. The system is still in practice, and probably will continue so; but I am fain to confess that I am unable to consider it the unmixed good that it has been stated to be.”

LANCASHIRE (WHITTINGHAM).—That female attendants in the male wards has a humanising effect upon the patients appears to be the result wherever the experiment has been tried. The Commissioners report on this subject as follows:—

“To these last [the ordinary female attendants] must be added three more women, the wives of male attendants, who live with them in the male wards, and take charge of the bedding, and are responsible for the general state of the dormitories. Judging from the good order of the wards in which this arrangement exists, there is every evidence of success in the plan, and we are glad to learn that as other male wards are opened, the same system will be adopted. Another arrangement made by Mr. Holland, and followed by the most complete success, is the employment of women only in the male infirmary. This ward now contains 43 inmates, who are attended during the day by four nurses, and who are watched at night by a fifth specially appointed for that purpose, and having no other duties. Nothing could be better than the state of this ward and its inmates.”

*(To be continued.)*

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## PART IV.—NOTES AND NEWS.

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### MEDICO-PSYCHOLOGICAL ASSOCIATION.

The quarterly meeting of the Medico-Psychological Association was held on the 13th May, 1875, in the Hall of the Faculty of Physicians and Surgeons, Glasgow. There were present—Drs. Fraser (Cupar), Fleming (Glasgow), Clouston (Edinburgh), Rorie (Dundee), Fairless (Bothwell), Campbell (Carlisle), Howden (Montrose), Skae (Larbert), Grierson (Melrose), Denholm (Dunse), Gairdner (Glasgow), Yellowlees (Glasgow), Brown (Edinburgh), Rutherford (Lenzie), and Dougan (Glasgow).

Professor GAIRDNER, who took the chair, welcomed the Association to Glasgow,

and said he believed he was almost the only member of the Association here—at least one of the very few—not connected with the speciality.

The CHAIRMAN—The first business is the exhibition of pathological specimens.

Dr. HOWDEN, Montrose, exhibited an aneurism of the basilar artery. The man was an epileptic, and had every symptom of syphilitic brain disease.

Dr. CLOUSTON then showed two specimens of tumours of the brain, the one being that of a slowly-growing carcinomatous tumour—and the other that of a syphilitic deposit. He exhibited microscopic sections of both tumours, and of the brain in the latter case, showing that the deposit was composed of ill-formed granular cells lying in the granular matrix. He made some remarks on the symptoms in each during life, showing that the one was a typical example of a slowly-growing tumour, producing few symptoms at first, but setting up a degeneration of the nervous tissue in the shape of grey absorptive degeneration, thickened membranes with long plates, &c., while the other was a typical example of a tumour, or deposit, of quick growth, causing intense irritation of the brain round it. He contrasted the symptoms during life mentally and bodily, the slowly advancing dementia in the one case with the melancholia and stupor in the other; the transient attacks of hemiplegia, advancing gradually to complete paralysis, in the one case with the severe convulsions in the other; the long course of the disease in the one case (three years) with the duration of the other (three months). The tumours in each case occupied the same positions, viz., the front of the anterior lobes. Dr. Clouston also showed the brain in a case of a very rare kind of general paralysis, spreading, by propagation, from the retina. It is now pretty well recognised that general paralysis may arise from locomotor ataxy. I have (Dr. Clouston remarked) three cases of this form of paralysis under my care, though I never saw a case till I went to Edinburgh. One of these is that of a man who was recognised to have laboured under locomotor ataxy, and he is now unquestionably a general paralytic. The other case had existed for seven years as a case of locomotor ataxy. He now is unquestionably a general paralytic. The three cases have a very similar history.

Dr. RORIE showed a piece of wood which a patient in the Dundee Asylum swallowed, and œsophagotomy had to be performed. (See "Clinical Notes and Cases," p. 282.)

Dr. HOWDEN—I doubt whether general paralysis does spread from the retina. It is so general a disease that you can scarcely say it commenced there and spread like a cancer. My notion of this malady has always been that it is a disease of the brain affecting all the motor, and, to a certain extent, the mental faculties of the patient.

The CHAIRMAN—I do not think we can admit anything like a pathological propagation from one side to another, but in reference to Dr. Clouston's theory that the marriage was the exciting cause in his case, it is pretty well established that there are certain cases of locomotor ataxy in which there is a stage of very greatly increased sexual excitability.

Dr. YELLOWLEES—I think there is a spinal disease extremely like locomotor ataxy that accompanies some cases of general paralysis, and I have a case of a man respecting whom I do not know whether his disease began in locomotor ataxy or began in general paralysis. He also mentioned a case in which a patient had broken a table spoon, and first swallowed the handle and then the bowl of the spoon, which stuck in the œsophagus. The only symptom was a certain amount of irritation and frequent coughing. The tube of the stomach-pump easily passed the obstruction. The patient died.

Dr. CLOUSTON—My theory is that it is a direct pathological propagation, which is the very reverse of what Dr. Gairdner holds.

The CHAIRMAN—I remember when there was a paper read at the Clinical Society in London. I remarked that we were dealing with entities that were not well understood. I said, as showing the essential difference in the two diseases I had been in the habit of observing, that in cases of general paralysis the patients could shut their eyes when standing and looking up and not fall, while in locomotor ataxy they at once become unsteady. At a meeting in Oxford afterwards the same question was raised, and we went to Colney Hatch Asylum and found my views confirmed. In one case which I published I remarked that after the man had become so unstable that he could do nothing for himself he became amaurotic, and he walked fully better than before.

The CHAIRMAN—Before leaving this department I should like to say that in consequence of being in London up till yesterday I have not been able to make any

preparations for this meeting, otherwise I might have presented some specimens. But I should like to mention that the case of athetosis which I presented at the former meeting—a very interesting and rare form of nervous disease—remained under view and treatment, and was tried not only with the suggestions made here but by various other suggestions, with no good effect. Now the lad has escaped my notice, in consequence of his having gone with his family to America. It is possible somebody may pick up this case in America, and identify it with the facts presented here.

Dr. JOHN A. CAMPBELL read a Paper on the “Discharge of Recovered Patients,” which will appear in the October number.

The CHAIRMAN regretted he had to leave this meeting at this point, but if after the meeting was over members are going westwards, and should desire to look into the Western Infirmary, he should be most happy to play the cicerone.

Dr. YELLOWLEES then took the chair, and invited remarks upon Dr. Campbell’s very interesting and practical paper.

Dr. FAIRLESS said that very often a want of money was a strong reason for persons to have patients back soon. He had experienced this over and over again. When people saw the least indication of recovery they were only too glad to receive their friends, often against the advice of the medical man, but he had no other alternative than to let the patient go, however much he might protest against it. In many cases the patient was brought back within a month. If instead of the pauper patients only receiving the Government grant, the middle class were receiving it, many who are now paupers would have been assisted. Any suggestion from this Association upon that point would be valuable. I think amongst the middle class there is great need of help being extended in this way. I had an application last week from a man in a southern county, whose brother is a licentiate of the Church. I was asked if I would receive the patient if he were sent by the inspector of the poor, for in that case the Government grant would be given. I said, “Certainly not; if you pauperise the patient I cannot receive him. You would have to send him to the district Asylum.”

Dr. RORIE—There is only one remark in Dr. Campbell’s paper to which I wish to allude—that is about allowing patients to go out and keeping their names on the books for 28 days. I have found that to answer well. It is not on probation, but allowing them to remain out.

Dr. YELLOWLEES—If the patient commits suicide during a visit out, the responsibility rests upon the man who let him out. The question is extremely important. There remains a certain amount of responsibility upon the Asylum, and it depends upon one’s personal experience how he is affected towards such experiments. If a patient commits suicide whilst absent upon trial, and while his name is still upon the books, you get the credit of a death to which you have no right. Besides, what do you gain by it? I question whether the patient recovers any better, and whether his feelings are more kindly towards the Asylum. I question whether the friends thank us for it. I question, also, whether the local doctor should be deprived of his fee.

Dr. HOWDEN—For many years I have almost given up the practice of sending out patients upon probation, because it is a very troublesome thing upon our books; and if the patient is not sent back you don’t know whether he has recovered or not. Instead of sending out patients on probation, the way I discharge unrecovered patients is by a minute of the parochial board.

Dr. CLOUSTON—Since I came to Morningside the general tendency of my experience is to make me less afraid of discharging patients, either unrecovered or very soon after recovery, than I was previously. In an Asylum that is always near the point of being over-crowded, you get into a state of mind that you discharge patients more readily. I have not seen any particular disadvantage from doing so. Only a small proportion of them come back. [Dr. RUTHERFORD—A smaller proportion return than of the recovered patients.] I agree with Dr. Howden that the system of discharging on probation in Scotland seems to be cumbrous in its working and not very satisfactory, because you don’t know whether the patient has been kept well. Therefore, instead of discharging pauper patients on probation, I really very seldom do it. I discharge private patients on probation, when their friends specially desire it. I think that cases of mania could be discharged sooner than those of melancholia. I once had a suicidal case of a young lad who was employed as an assistant to a butler. One Sunday afternoon, being apparently quite well up till that moment, the lad was washing dishes, when his master heard a noise, which

caused him to go into the pantry. He found he had suspended himself to a towel roller behind the door. He was cut down, and was unconscious for a time. He was brought to the Asylum next day, where he never showed the slightest sign of insanity. He denied all knowledge of the event, and said that he remembered everything up till a certain point that he was washing the dishes, but after that he remembered nothing more. It was exceedingly difficult to know what to do with the case. His friends came from Lincolnshire, and wanted him home. We kept him a month, and then discharged him.

Dr. RORIE—I think the patient should be sent out when he is free from all danger. The patient needs to be dangerous to himself and others to be kept in the Asylum. The great majority of out-patients in Dundee are dangerous to themselves and others.

Dr. SKAE—I think Dr. Rorie is right according to the Act. It is so soon as it shall appear to the Superintendent that a patient is so far recovered that he can be discharged without risk or injury to himself and others, the Superintendent shall grant a certificate to that effect, and so cause him to be discharged.

Dr. YELLOWLEES—We have heard a great deal about the management of Asylums, I will now ask attention to the medical aspects of the paper.

Dr. HOWDEN—So far as my experience goes, you will have to judge each case by itself. I think, in puerperal cases, when the patients begin to recover, they continue to do well. But, as I said, each case must be decided by itself. The condition of the patient at home after discharge must be considered. I do not think you can lay down any rule. I had a case this last year of a Post Office clerk. He had been very much annoyed by the other clerks, and being rather a weak lad it affected him greatly. After leaving his work one day he went to play at golf; but when upon the Links he lost consciousness, and had an attack of mania transitoria. A policeman was got, and the lad was taken to the police office. He came out to the Asylum next morning raving mad. But he was not a quarter of an hour in the Asylum till he was sane. In two or three days he wanted to go out. I was not justified in keeping him, and I let him out. The event proved I was right. About 20 years ago I remember a patient who was brought to Morningside. He was a maniacal patient when admitted. He was a butcher from Fife, and had attempted self-destruction. He was very excitable, but, like this lad, he got perfectly well. He was kept for six or eight months. He had knives and scythes at his command, and did himself no harm. He was discharged as recovered. He went out and cut his throat the night he was discharged. You cannot keep such a man all his life in an Asylum.

Dr. CAMPBELL—I think you are justified in keeping for a fortnight a man who was quiet after an attack. I know of a case of a man who had insanity in his family. He had made a bad bargain, and tried to hang himself. Luckily the rope broke. He repented, and did not any more repeat the attempt.

Dr. FAIRLESS—I had a case not long ago, certified to be a case of mania. The day after the patient came he seemed to be well. On inquiring into the case I found that he had been suffering from rheumatism. No doubt he took narcotics. In less than 48 hours he was perfectly well. I asked the friends to remove him, for I considered it was a mistake to send him to the Asylum. In a week he was out again. He was at Church partaking of the communion, and has never been ill since. He was almost commencing an action for damages against the medical men for sending him to the Asylum.

Dr. SKAE—Yet we do see cases which, at first, we think it is a pity should have been sent to an Asylum but which, eventually, turn out to be incurable. I remember a woman who, on admission, seemed merely hysterical, but who got worse and worse, and eventually became incurable. It is difficult to say when a case should not have been sent to an Asylum.

Dr. YELLOWLEES—I agree strongly with what has been said as to the discharge of unrecovered patients. Nothing more proves the force of the statements made than the fact that as regards some patients who escape you expect to hear of suicide next day; but in a month or two you find that the patient has been at home and self-sustaining. That has happened again and again. As to the sudden recurrence of suicidal symptoms, I do not know that the law allows us to do anything else. The patient had ample opportunities of committing suicide in the Asylum, and did not use them; but uses the first opportunity when he gets out. I had the case of a blacksmith in Wales. Apparently he had no such thought as that of self-destruction. I discharged him on probation. In a few days after he left the Asylum his body was found in the shaft of a coal mine. I think some of the senile cases should not

come to us at all. The trouble of nursing them should be taken at home. There are two classes of such cases. One class should never come to us; and the other class, especially where there are complications, it is not fair to expect friends to manage them. We have all had cases of general paralysis where the recovery was so perfect that you felt compelled to discharge, and yet with a moral certainty that some day there would be a relapse and that the man would die of general paralysis.

Dr. JOSEPH J. BROWN read a paper, "Two Cases of Apoplexy of the Pons. (Originals, p. 265.)

Dr. SKAE said that the very excellence of the paper rather interfered with its discussion, for there was a great deal of work and close anatomical reading in it, fitting it more for patient study than for discussion off-hand.

Dr. CLOUSTON said that there were many interesting points in the paper. One was that in the case of J. B., we had a man with very long-continued insanity of a rather peculiar and distinct type, and also long-continued motor symptoms, apparently of syphilitic origin. We had this man going on for between thirty and forty years still living with this disease upon him, whatever it was, mental and bodily; and at his death we find a distinct pathological basis for the symptoms present. I think great credit is due to Dr. Brown for working out the pathology of this case with regard to the vessels and nerve cells, showing the physical and pathological explanations of this chain of symptoms, mental, motor, sensorial and nutritive. We can put our hands on the actual disease, the degeneration of the cells and vessels, and the evident presence of apoplexy. We have a very decided and beautiful disease of the spinal cord, which I recommend all to see for themselves in these specimens. The interest of the case was heightened by the fact that the man lived so long, and so that we are able to see the changes in the most evident way. If the man had died early we should not be able to see all this degeneration; but he lived long, and degeneration gradually proceeded. It was a strong addition to our pathological arguments as to the cause of insanity that in this exceptionally long case we are able to demonstrate those changes which in many recent cases we had ground for believing, but were not able to demonstrate in this way. Perhaps that is the most important point of the case as regards our own view of it as alienists, all the functions of the nerve system having gradually become affected in this man. With regard to the cause of death in the recent case of J. W., Dr. Brown's theory is the only point upon which I would venture to take issue. I am not sure the man did not die of apoplexy in the pons, though there are many grounds for Dr. Brown to conclude he died of congestion and effusion. I am willing to admit it is an open point. I think it will be found that J. B.'s was the only case on record of that form of syphilitic insanity, which is manifested at first by delusions as to unseen agencies, being found to depend upon demonstrable disease of the nervous tissues. The paper is very interesting, and well worked out.

Dr. YELLOWLEES—The microscopic preparations must appear along with the paper. These illustrations are so perfect, that unless one saw them one would think they were made for the paper than otherwise. The man was kind enough to live so long as to make his whole pathological history very valuable. The history of nervous degeneration was very interesting. The syphilis was discovered afterwards; but it would have been as satisfactory if one had thought that syphilitic insanity was the type and expected something of that kind in the *post-mortem* examination.

Dr. BROWN—There was a distinct history of syphilis recorded in his case, and I got it from himself also; but in reading up the case there is distinct statement that the patient suffered from syphilis, and was treated with mercury when he was 17. I knew this long before he died. I think this case goes to prove that there is no definite lesion in the vessels in syphilis.

Dr. CAMPBELL read, on behalf of Dr. M. D. Mac Leod, a paper, "Report of a case of cut-throat, nourished by enemata Recovery." (See Clinical Notes and Cases, p. 277.)

Dr. YELLOWLEES—I happen to know only one case parallel to this. The reason for adopting that mode of feeding was quite similar. A man thought a jar containing carbolic was whisky, and took a draught of it. He vomited promptly, and the stuff he vomited was so purely acid that it blistered his breast. The fauces and the throat were terribly inflamed, and for eleven days he could not swallow. He was fed by enemata, and his life saved. The case was under the care of my successor, Dr. Pringle. It is only when the throat passage is closed that you are compelled to resort to such an unusual mode as that of the enema.

Dr. HOWDEN—A case may occur in which the patient refuses to take food. You force it into his mouth, but he immediately vomits it. In that case it is useful to try to feed by enemata. With regard to feeding by the stomach pump, I was asked lately by one of the Commissioners whether any who had been artificially fed died by gangrene of the lungs. I looked up the death register, and found that nearly every patient who had died of that disease had been artificially fed. It does not follow that the feeding is the cause of the gangrene, but the subject is deserving inquiry. Then in administering ordinary enemata to the excited patients, do any accidents occur? I had one case in which I think the patient died from rupture of the bowel during the administration of an enema. He took an epileptic fit, and died. He never had such a fit before.

Dr. CAMPBELL said that the tube he used for feeding with the stomach pump is entirely of india rubber. I think this prevents injury. You dip it in glycerine, and it goes down of itself. Arnold and Sons, London, make them.

Dr. YELLOWLEES—I had to make them myself.

Dr. RUTHERFORD—Five years ago I was struck by the number of deaths in the Birmingham Asylum of those who had been fed artificially, and by the fact that the cause of death in nearly the whole of the cases was gangrene of the lungs. They were generally fed with bread, milk, and brandy. In the Argyle Asylum I don't think during the whole three years I had more than three cases that required artificial feeding.

Dr. RORIE—I never had occasion to feed with the stomach pump—I fed my patients with the spoon. I have been 15 years in the Dundee Asylum, and have never failed in one case. I vary the means. In a few very stubborn cases I have employed the steel instrument to open the patient's mouth, regulating deglutition by occasionally compressing the nostrils. I never found a case which we did not manage. The patient whose case I read to the meeting was fed seven or eight days by enemata. It supplied sufficient nourishment all the time. I was struck with the fact that when she felt thirsty an injection of a tea cup full of warm water relieved her at once. I have tried feeding by the nose, but in some cases found the patients ejected the food by the mouth instead of swallowing it.

Dr. SKAE—About three years ago a patient of mine was removed to Fife and Kinross Asylum. Dr. Tuke told me he fed him with the stomach pump, and that the patient died of gangrene of the lungs. He said he had noticed very frequently that patients who had been fed with the stomach pump had died from gangrene of the lungs.

Dr. CLOUSTON thought it was impossible for particles to get into the lungs if a patient is properly fed by means of the stomach pump. I decidedly think that stomach pump feeding is a capital thing. I think we feed far too little in that way. Whenever there was any difficulty with a patient from his taking no food or too little I had no hesitation in using the stomach pump. I have fed patients one hour after admission. In no other way could you administer food, except by a struggle of a quarter of an hour. I have tried nose feeding with unfavourable results. Occasionally you can get a patient fed for a few days by the nose, but then he holds his breath and spits out the food. Then with regard to enemata, surely in any case if we can get food into the stomach we should put it in rather than in the rectum. In puerperal cases we often get poor, weak women almost at the point of death, it being long before they are sent to the asylum. In such cases, when I cannot get them to take sufficient food, I feed them with the stomach pump. I had such a case lately, which was almost moribund. She was at once fed with the stomach pump, and she recovered. I can recall two cases of death by gangrene of the lungs, and the patients had not been artificially fed at all. They were cases of melancholia and of great deficiency in nervous power. It is in these cases rather than in cases of feeding with the stomach pump that gangrene of the lungs occurs. But this would be a suitable subject to bring up at the next meeting, and in the meantime we can look up our post-mortem registers. I am strongly in favour of feeding with the stomach pump, thinking it is better than feeding with the spoon when there is difficulty. I can confirm Dr. Campbell's opinion as to the efficiency of the india rubber tube. We have used it for three months. In many cases the hard tube is more easily passed. Can anyone tell the case of a person who has long been fed artificially?

Dr. RUTHERFORD mentioned seven years.

Dr. CLOUSTON—I have a friend who tells me of a patient who has been fed 8,300 times. This would be probably over 11 years. I once passed the tube into the trachea, and, of course, at once withdrew it, the patient being none the worse.

Dr. SKAE—I think it is common to feed with the stomach pump long after it is unnecessary, just because the patients desire to be fed that way.

Dr. HOWDEN—I had a patient who lay down upon the bed and passed the stomach pump herself; she would not take food in any other way. As to accidents occurring by artificial feeding, I do not mean that these are confined to the stomach pump. I mean any kind of forced feeding—by Dr. Rorie's spoon or otherwise. I gave up the stomach pump for five years, but took to it again. I thought the annoyance to the patient was greater in the one case than in the other.

Dr. YELLOWLEES—I think it is a very happy thing we departed from the immediate scope of the paper, for we have had some interesting practical conversation about artificial feeding. I have not seen dangerous results from enemata, and I am surprised that Dr. Rorie has never found a patient whom he could not feed with the spoon. I feel very strongly that there are cases where the spoon is a total failure unless you push its use to such an extent that it becomes positively perilous. I have no hesitation in preferring the stomach pump as being the least exciting to the patient. I have never seen dangerous results from stomach pump feeding, and I am surprised that it is affirmed there is a connection between stomach feeding and gangrene of the lungs. I think the conditions in which you find gangrene of the lungs are just the conditions in which you will find artificial feeding necessary. But it would be interesting further to investigate the subject, and therefore I think we should all look back on our death registers. I believe there is more danger from forcible feeding by the spoon, in consequence of the food getting into the air passages, than by the stomach pump. I would not allow any patient to go a week without food; I would feed artificially sooner than that, but I hold it is a state of mind to be deprecated to allow patients to get into such a condition as to lie down and pass the stomach pump themselves.

Dr. GAIRDNER, speaking of fever patients, said that as a general rule the whole alimentary and digestive systems go together, and it did not seem that putting food into the stomach would enable it to be digested.

A vote of thanks to the Faculty of Physicians and Surgeons for the use of the Hall concluded the proceedings.

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### *Obituary.*

#### ROBERT STEWART, M.D., BELFAST.

The Medico-Psychological Association has sustained a severe loss in Ireland by the death, on the 6th April, of Dr. Robert Stewart, the Resident Physician Superintendent of the District Lunatic Asylum in Belfast. The late Dr. Stewart was born in 1803 in Dublin, and received his professional education at the College of Surgeons' School of Surgery in Dublin, and took his medical degree after studying at the University of Glasgow. He entered the profession in 1829, and for the first six years of his professional career he was engaged in general practice in Dublin. In 1835 he was appointed Superintendent of the Belfast District Asylum, the first of the Irish asylums that had the advantage of a Resident Physician. For many years Dr. Stewart, was the "Father" of the Irish Asylum service, and was looked up to with feelings of the greatest respect and confidence by his colleagues in the profession, and by the general body of Irish Superintendents. From the outset he was a warm supporter of the Medico-Psychological Association, of which he was the first branch-secretary for Ireland, an office that he retained up to the last general meeting of the Association. The duties connected with the honorary secretaryship were discharged by Dr. Stewart with so much zeal and efficiency that when he tendered his resignation it was found extremely difficult to induce any of his Irish brethren to allow their names to be submitted to succeed him, as a general feeling existed that it would be impossible for anyone who did not enjoy the wide popularity of Dr. Stewart to attempt to perform the duties after him. Dr. Stewart, early in

his asylum career, pronounced himself a warm adherent of the non-restraint system of treatment, then in its infancy; but he at the same time conceded that cases might arise which would justify the imposition of mechanical in preference to prolonged vital restraint. In practice his patients enjoyed all the advantages of the principle of non-restraint, but in rare and exceptional cases the subject of our notice did not hesitate to express his conviction that a patient might be restrained with advantage to himself and to those around him. During the forty years that Dr. Stewart was the Chief Officer of the Belfast Asylum that institution attained a high reputation for the skill and humanity that guided its administration. By the profession in Belfast Dr. Stewart was deeply respected; he possessed the entire confidence of his subordinate officers; and we use no mere form of speech when we add that he was loved by his patients. Dr. Stewart was a man of wide attainments, and of sympathies as wide as his attainments. He was a frequent contributor to the pages of the "Journal of Mental Science" and other medical periodicals; and his kindly presence will be deeply missed at the approaching meeting of the Association in Dublin. The fatal cold which passed into pleuritis was caught while discharging the charitable office of collecting subscriptions for the Royal Medical Benevolent Fund Society of Ireland, of the Belfast branch of which he was for thirty-two years the honorary secretary. He died on the 6th April, after an illness of only five days. The most touching tribute to his memory was to be seen in the unaffected grief and dismay of the asylum patients to whose care and well-being he had devoted the energies of a long and valuable life.

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### *Appointments.*

BIRT, E., M.R.C.S.E., has been appointed Assistant Medical Officer to the Salop and Montgomery Counties Lunatic Asylum, Bicton, near Shrewsbury, vice Talbot, resigned.

COOKE, E. M., M.R.C.S.E., has been appointed second Assistant Medical Officer to the Worcester County and City Lunatic Asylum, Powick.

DICKSON, H., M.B., has been appointed Assistant Medical Officer to the Bristol Lunatic Asylum, Stapleton, near Bristol, vice Draper, resigned.

FAUSSETT, J. D., L.M. and S.T.C.D., has been appointed Assistant Medical Officer to The Friends' Retreat, near York, vice Widdas, resigned.

GOWAN, C., M.D., C.M., L.R.C.S. Ed., Senior Assistant Medical Officer at the Worcester County and City Lunatic Asylum, Powick, has been appointed Medical Superintendent of the Toronto Lunatic Asylum, Canada, vice J. Workman, M.D., resigned.

MERRICK, A. S., M.D., L.R.C.S. Ed., has been appointed Resident Medical Superintendent to the Antrim Lunatic Asylum, Belfast, vice Stewart, deceased.

MICKLEY, G., M.B., C.M., has been appointed Resident Medical Superintendent of St. Luke's Hospital for Lunatics, vice Eager, resigned, on becoming proprietor of Northwoods Asylum, near Bristol.

SHAPTER, L., B.A., M.B., has been appointed Consulting Physician to the Wonford House Hospital for the Insane, near Exeter.

WALLIS, J. A. M., L.R.C.P. Ed., L.R.C.S.I., has been appointed Resident Medical Superintendent of the Hull Borough Lunatic Asylum, vice Casson resigned.

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## PART 1.—ORIGINAL ARTICLES.

*President's Address at the Annual Meeting of the Medico-Psychological Association, held August 11th, 1875, at the Royal College of Physicians, Dublin.* By JAMES F. DUNCAN, M.D., President of the College.

GENTLEMEN,—In the name of the Irish members of our Association, I desire to greet you all with a very cordial welcome on the occasion of this your second visit to our city. Fourteen years have elapsed since you last honoured us with your presence. I hope that a careful comparison of the present state of the institutions here with their condition then will convince you that the spirit of improvement has been among us, and that we have endeavoured in some measure to keep pace with the progress apparent in other districts in this department of the healing art.

I cannot omit here saying how deeply I deplore the loss sustained by our Association in the death of four of our most efficient Irish members during the last year, all of whom would have joined most heartily in our endeavours to make this meeting acceptable to you and creditable to ourselves. The four gentlemen referred to are Dr. Shiell, of Enniscorthy; Dr. Eaton, of Ballinasloe; Dr. Murphy, of Killarney; and Dr. Robt. Stewart, of Belfast. Of our late Honorary Secretary I wish to speak more particularly. He had long desired to see the Association repeat its visit to this country, and for that purpose had made it a point to attend the anniversary in London last year. Had his life been spared, I have no doubt he would have taken an active part in our proceedings to-day. He was, if I mistake not, an original member of our Association, and had its interest very deeply at heart. That he was not more frequently present at the anniversary meetings arose, not from any fault of his, but from the pressure

of official engagements at home. All through life the one object of his heart was to make the Asylum over which he presided a model of what such institutions ought to be, and he succeeded in winning for it a very high place in the estimation of the public. His attachment to his profession was extreme. Whatever affected its honour or advancement had his warmest sympathy, and he was ever ready to render any personal service in its behalf that circumstances might require. His untimely death was a proof of this. The illness which terminated so unexpectedly was brought on by exposure to cold in the benevolent effort to extend the usefulness of another society connected with the profession, of which he was honorary secretary. Decided in his opinions and firm in maintaining them, he was yet able, by his unassuming deportment, to conciliate the respect and esteem even of his opponents, and to secure the good opinion of all who were fortunate enough to make his acquaintance. He has left behind him a reputation which most of us may envy, and an example which all of us may copy.

Before proceeding to discuss the topics which I intend to bring under your notice in the course of this address, permit me to return my most grateful thanks for the high honour you have conferred on me in electing me President for the coming year. I feel it to be a compliment which any member of the profession might well be proud of, no matter how high his position otherwise might be. As for myself, when I call to mind the many distinguished men who have preceded me in this office, their literary labours, their high reputation as psychologists, and the able and effective addresses they have delivered from this chair, I confess that I feel unworthy of the honor, and that I owe it to the kindness of private friends rather than any merit of my own that I have been singled out for the post. I know that personally I have no claim to consideration at your hands beyond the mere fact that from the time when, in obedience to a call I could not disregard, I was induced to take the oversight of my late father's asylum I threw whatever energy I possessed into the task of winning for it a high place among the kindred institutions of this city, in the confidence of the profession and the public. That task is now accomplished, my connection with Farnham House having been recently severed; but I allude to the circumstance for the purpose of mentioning what it may be pleasant for you to hear, namely, that one of the strongest motives which prompted

me to enter on the task, and sustained me while prosecuting it, was the expectation that some time or other the members of this Association might again be induced to hold their annual meeting in this city, and that I might then have an opportunity of showing them the nature and extent of my labours. That expectation has, of course, been disappointed, but I set it before you as a proof of the good you are doing, silently, and perhaps unconsciously, by these periodical visits, and as a reason why the annual meeting should not be held constantly in one place, because the effect of such an arrangement must be to lessen the motive to exertion in those very institutions which, from their remoteness, might seem specially to need it.

I cannot, however, conceal from myself the feeling that one reason why I have been thus honoured arises from the office I am permitted to hold in this Hall; and this only makes me esteem it all the more highly as a delicate and well-deserved compliment to the College I so unworthily represent. I know not how it may be in the sister colleges of the empire, but I think it deserves to be put on record that the Irish College of Physicians has not made the cultivation of this branch a bar to the attainment of its highest offices. Two of my predecessors in the presidential chair, Drs. Mollan and Banks, were physicians to the Richmond District Asylum, and although the appointment they held was of a public nature, while that with which I was connected at the time of my election was not so, this only enhances the argument, and renders the action of the College more worthy of your regard.

The time is not so very long gone by since everything connected with the management—I cannot say treatment—of the insane was a matter of general reproach, and every one who devoted himself to the pursuit was avoided as much as possible. They were looked on as left-handed neighbours, very useful in their way, because their assistance could not always be dispensed with, but whose acquaintance no respectable person was expected to acknowledge. Too often they were men of inferior social position, low-minded in their taste, imperfectly educated, and with nothing in their character to command respect, even from those who employed them. Sordid in disposition, their only object was to make money out of those entrusted to their charge, and that at the least expense and trouble to themselves. In the present day all this is changed. Devotion to this specialty no longer

entails the reproach upon its votaries which it once did, and the feeling, if it exists at all, is rather the remains of an exploded prejudice than the true expression of public opinion on the subject. Now, if we ask ourselves to what is this change attributable, the answer must be that it is due in great part to the intimate connection which has been established between the practical treatment of insanity and the other branches of the healing art. All who engage in our specialty are required by common consent to have graduated in medicine, and to have thereby acquired somewhat of the tone of mind and habit of thought incident to the ordinary members of the profession.

Insanity in its various forms is now universally admitted to be a disease—differing, indeed, from ordinary disease as to its nature and phenomena—but a disease notwithstanding, and therefore to be viewed in the same light and treated on the same principles as those which regulate medical practice in other branches. The haze of mystery with which ignorance and superstition had invested it in former ages, and which by repelling investigation prevented proper efforts being made for its removal, has been set aside, and the more rational idea prevails that it is merely an accident of our fallen humanity, involving nothing supernatural in its occurrence, so as to remove it from the range of scientific investigation and of ordinary treatment. Hence the propriety, rather, I should say, the absolute necessity of these cases being handed over to the care of members of the medical profession, who by the nature of their every day duties are the best fitted to unravel the mysteries of their phenomena—to investigate the intricate chain of circumstances connected with their origin—to discriminate the relative importance of their various symptoms—to estimate the effect of remedies—and above all, to keep steadily before them in despite of every discouragement and disappointment the recovery of the patient as the one great object to be continually aimed at.

It is quite unnecessary for me to say one word to impress upon all your minds the great importance of continually maintaining the closest possible connexion between the practice of this specialty and every other branch of scientific medicine; and this not simply from the “Kudos” to which it leads, but because we need to foster within us as much as possible the medical mind, properly so called, and which can only be effectually done by constant intercourse with the sick. We need it also for keeping the weapons of our armoury

bright by habitual use, so as to guard against falling into that habit of routine, which is so apt to be engendered when our practice runs in a limited groove, and which, when established, becomes an effectual barrier to all enlightened progress.

Holding these opinions, I consider it most important that a good understanding should exist between this Association as the acknowledged representative of modern psychology and the several Medical Corporations throughout the kingdom, and that every opportunity should be embraced of manifesting that feeling by offices of kindness on both sides.

It is a matter deeply to be regretted that the Irish contingent of this Association has hitherto done so little for the practical advancement of the science. So far as psychological literature is concerned, we are all unhappily chargeable with the reproach of silence. Yet no one who reflects on what Irishmen have achieved in other branches of the healing art can imagine for a moment that this has been caused by any want of capacity to grapple with the subject. Whether it arises from a want of the peculiar taste necessary to find pleasure in the pursuit, or from a want of more direct inducements to enter on the task, is not for me to say, but I think some explanation of the matter may be found in the fact that, with few exceptions, the superintendents of our large asylums are left without professional help to aid them in the discharge of their important duties. Only four out of our twenty-two district asylums are provided with a second resident medical officer. Even the Dundrum Asylum, which, from the peculiar character of its inmates seems more than any other to require such assistance, is no exception to the rule. How is it possible for any single person, having such a multiplicity of different duties to discharge, to find leisure for the prosecution of literary labours with any reasonable hope of success? A mind loaded with care, and exposed to continual interruption and distraction, even when not exhausted by fatigue, is not in a condition to embark in the perilous and unprofitable work of medical authorship. And yet it is to these great institutions we must look rather than to the proprietors of private asylums for any substantial work in this direction, because the field of observation and facilities for testing various questions regarding pathology and treatment is there, and there only, sufficiently large to enable the parties making them to arrive at satisfactory results; and the publication of illustrative cases taken from the class of patients under their

care is not open to the objection that lies against the publication of similar details taken from higher life, where the history might be recognised and resented as a breach of professional etiquette. I myself have been deterred from publishing notes of cases in my own practice from this feeling, and I doubt not others in the same position have been restrained in their action by motives of the same kind. That I am not wrong in believing that if our large asylums were properly furnished with efficient help there would be no ground of complaint against Irish psychologists on the score mentioned, is proved by the fact that Dr. Atkins, assistant in the Cork Asylum, has recently published a very interesting paper on the Morbid Changes in the Minute Bloodvessels of the Brain in the Insane, which is at once a proof of his capacity for labour of this kind, and an earnest of what we may expect hereafter from his pen.

It is not to be expected that any representations which might be made to Government to increase the professional staff of these Institutions, founded on the benefit that would accrue to science by the change, would be attended with success. We have not yet arrived at that stage of perfection in the art of statesmanship, when advantages of this kind will be taken into account. But there are other reasons equally cogent, which should convince them that no further time should be lost in supplying the remaining district Asylums with a second resident Medical Officer. It ought clearly to be a settled principle of management in all these Institutions, that they should never be left a single moment, day or night, without competent medical assistance on the spot to meet cases of accident, or unexpected emergencies. How is this to be accomplished when there is only one person on the staff? He must, if his own mind is to be maintained in the full vigour of its power, have occasional intervals of rest and change of scene, and of mental occupation, and whether the interval be only for a day at a time, or a longer period, the Institution must suffer if his post is left unoccupied. The same will also happen if a temporary substitute be employed, because the latter, being a stranger to the patients and the work, can very imperfectly discharge duties with which it is impossible for him to be familiar. All which would be obviated by having a second Medical Officer permanently on the staff. They could then relieve each other without inconvenience, as circumstances require, the anxieties of the post would be diminished by having two to share them together,

while their efficiency would be increased by their energies being kept constantly fresh for their work.

The attention of the various bodies qualified to give licenses to practice has been recently drawn by a circular, emanating from different lecturers on Insanity, to the importance of having instruction on this subject made a necessary part of the ordinary curriculum of medical study. When it is remembered that every medical man when duly registered is entitled by law to sign certificates of Insanity, the effect of which may be to consign the person to confinement in a Lunatic Asylum, it seems strange that no care has been taken by the Legislature, or the authorities granting the license, to ensure that the practitioner so qualified to sign has had a competent knowledge of the subject beforehand. Yet in the present state of the question, with such jealousy subsisting between the colleges, it seems hopeless to expect that any effective measures will be taken to remedy the defect. To institute courses of lectures and to leave attendance on them optional on the part of students can only lead to disappointment. The experiment was tried many years ago in the Richmond Asylum, in this city, and ended in failure, as might have been anticipated. A few enthusiastic students attended for a time, but others afterwards could not be got to take their places, and the attempt was given up. Even the proposal contained in the circular, to allow a student to substitute a three months' course of attendance with clinical instruction in the wards of an Asylum for a corresponding period of hospital attendance with clinical instruction in general medicine, does not seem to be generally accepted, the common impression being that the time at present devoted to these practical courses is not greater than it ought to be. Still I cannot help thinking that the whole subject of Medical Education must very soon be thoroughly revised and placed upon a sounder basis, when it is to be hoped effectual steps will be taken to remedy what every one must acknowledge to be a glaring defect in the present system. A good deal might be done in the meantime if the Governing Boards of all the district Asylums could be induced to act on the provision embodied in the Privy Council rules for their guidance by appointing a clinical clerk to each Asylum, to take notes of the cases, and act under the direction of the superintendent. The pay and emoluments are sufficiently liberal to induce many advanced students to seek for the appointment, and in this way a much greater

practical acquaintance with insanity would be diffused throughout the profession than is the case at present.

When I commenced writing this address, a most important difference in the law relating to lunatics existed in England and Ireland. The 5 and 6 Vic. chap. 123, which enacted that proprietors of private asylums in Ireland should take out a license, pay a tax to the Crown, submit to constant and strict supervision by official Inspectors, and be subject to other stringent regulations regarding the admission of patients, not only gave them no authority for so doing, but expressly enacted, Sec. 47, that it was not intended thereby to give them any greater protection from the penal consequences of their acts than they previously enjoyed. A more manifest injustice can scarcely be conceived, because, if such institutions are wrong in principle they ought to be at once abolished; but if, under proper inspection and control, they are capable of becoming a public benefit, reason and justice require that the parties engaging in the pursuit should have all proper protection when discharging their duty in a legal manner. What made the hardship the greater was that the common law of England and Ireland did not sanction the confinement, for any purpose whatsoever, of any lunatic who was not dangerous to himself or others. Experience on the other hand has abundantly proved that confinement in a properly conducted Asylum is absolutely necessary for the treatment and care of a large proportion of all lunatics, whether dangerous or not; so that as the law stood, a large proportion of curable lunatics should either be left destitute of what was absolutely necessary for their recovery, or an illegal act committed, subject to the risk of subsequent prosecution and punishment, for what was really intended for their benefit.

The circumstances under which this Act was passed sufficiently explain the reasons why these penal clauses were introduced into it. Previous to its introduction, private asylums in Ireland might be said to be left practically without supervision or control. But a case having occurred in which the proprietor of one of these houses was prosecuted for false imprisonment, and circumstances having been proved in evidence seriously compromising his conduct, public indignation was excited, and under the influence of this feeling the Act was passed in the objectionable form mentioned. But when the corresponding English Act was passed, 8 and 9 Vict., ch. 100, a few years later, whether owing to the fact that the heat of

passion had then cooled down, or that greater care was taken in the consideration of the details, not only was the penal clause of the Irish statute omitted, but a special provision was introduced, permitting the proprietors of licensed houses, when proceedings are taken against them for false imprisonment, to plead compliance with the requirements of the Act as a justification of their conduct. It is obvious that while this state of things lasted the proprietors of Irish Asylums were placed in a much more unfavourable position than their English brethren. But what made the case worse was that the injustice complained of affected not only the proprietors of private licensed houses, but also the superintendents of the district asylums as well, for they were equally liable, according to the exposition of the law by the highest judicial authorities, to pains and penalties for the confinement of pauper lunatics, unless they were shewn to be dangerous. It was bad enough that private individuals voluntarily undertaking the care of the insane for their own profit should be liable to pecuniary loss in a transaction where every principle of justice should hold them blameless, but it was much worse that the superintendents of district asylums, who were public servants, and had no personal interest in the detention of anyone under their charge, should be equally exposed to prosecution and punishment, simply because the party legally committed to their custody had not committed some overt act entitling him to be classed among dangerous lunatics. What I have stated may appear incredible to some, but the correctness of the position was established by the case of *Crooke v. Lalor*, tried in December, 1870, when a verdict was had against our former President, the valued and efficient superintendent of the Richmond Asylum, and damages to the extent of £100 were given against him, on the grounds stated. If the original Act owed its existence to the case of *Hayden v. Harty* in the year 1842, its amendment in the present Session of Parliament by the Lunatic Asylums (Ireland) Act, just passed, is to be attributed to the manifest absurdity brought to light by the later case of *Crooke v. Lalor* in 1870.

The necessity for an alteration of the law is plainly pointed out in the closing paragraph of the last report to Parliament of the inspectors of Irish Lunatic Asylums. I fully intended, had nothing been done in the meantime, bringing the subject fully and strongly under your notice, in the hope that an earnest representation to Government, emanating from this body, might have some effect in getting the grievance

remedied. The matter, however, has been taken up by the Chief Secretary for Ireland, and a bill, evidently intended to effect this object, among other things, has been passed through both Houses of Parliament, and now only awaits the Royal sanction to become law. In its original form, this bill left certain formal details of the previous Act, which were open to objection, unnoticed, simply, I believe, because the parties drawing it up had no practical acquaintance with the subject. As soon as I procured a copy of the bill, I summoned, at very short notice, a meeting of several superintendents and proprietors of asylums in the neighbourhood of Dublin to meet at the College of Physicians to consider the measure, the result of which was that several resolutions, embodying suggestions to meet these difficulties, as well as another important one, emanating from Dr. Lalor, to assimilate the conditions on which retiring pensions may be granted to retiring superintendents, to those in the English code, were agreed on, and forwarded to the Solicitor-General for Ireland, with a request that he would get them introduced into the measure during its progress through the House.

Through the kindness of that gentleman, I was yesterday favoured with a copy of the Amended Bill, in the form in which he expects it will ultimately be passed into law. I regret to observe that, although one of our suggestions has been adopted, the others have been thrown overboard, which will leave the measure, in my opinion, open to serious objections. Clause 47 of the original Act is left unrepealed, which contains the provision that declares no further protection is given by the Act to parties confining a lunatic beyond what previously existed under the common law, and which is quite at variance with the spirit and tenor of the new bill. No change has been made in the faulty form of the medical certificates, and the statement and order prescribed by the original Act, which experience has shewn to be difficult, if not impossible, of observance in numerous cases, where every desire exists to comply with the legal requirements strictly. And although the clause, as suggested, which exists in the English Act, to enable corrections to be subsequently made in the certificates and statements, has been incorporated into this one, I fear room will still exist for controversy and litigation, because the clause neither specifies the kind of incorrectness or defect which may be thus amended, nor the mode of doing so; and even if full protection is thereby secured to the proprietors of licensed houses and the superintendents

of asylums, still they are placed in a false position before the public, which they ought not to occupy, because a correction of any kind implies a previous irregularity, all of which would be avoided if the law had been amended in reference to these formalities, so as to make them correspond with those in the English Act.

But the greatest omission of all is, that it leaves unredressed the grievance of which the Irish Superintendents have to complain, that the right to a retiring pension is not conceded to them until they have served forty years, whereas the same privilege is conceded in England after a period of fifteen years. I fear the parties personally interested in this matter must put their shoulders to the wheel if they wish to have their rights conceded, and, in doing so, I feel persuaded they will have every assistance from the members of this Association.

Before quitting this subject, it may be satisfactory to some here to learn that, notwithstanding the defects in the Act of 1842, only two actions for false imprisonment have been tried in Ireland during the thirty-three years it has been in force. One of these has been just alluded to—the other, *Matthew v. Harty*—was not against the defendant as proprietor of an asylum—though he actually was one—but as a medical man signing the certificate for his admission into Swift's hospital, and as having been the active promoter of his confinement there. The case was a very remarkable one, and presented several anomalous points calling for observations, did circumstances permit of our dwelling upon it. No one, who attentively reads the evidence, can doubt that the plaintiff was subject to periodic attacks of melancholia, and that the proceeding was taken in good faith; but one of the extraordinary facts evolved in the course of the trial was that the plaintiff, unknown to himself and every one else, was a natural son of the defendant, who had carefully watched over him from infancy, given him a good education, and anxiously desired to promote his advancement in the world. Juries, when they find a verdict, do not furnish us with the reasons that actuate their decision, and we are left to conjecture the grounds upon which they arrived at the conclusion. In this instance it seems probable that they thought some compensation was due to the young man for the exposure that had taken place, and made their award accordingly. I am happy to be able to say that I have been informed, on the best authority, that the plaintiff never

took a farthing of the damages, and expressed regret that he had ever been so ill advised as to bring the action.

In addition to the cases mentioned, two other actions were instituted, but never went to trial. The first was the case of Crooke v. Jennings, in which the same plaintiff that brought the action against Dr. Lalor prosecuted the physician to the South Dublin Union, for signing the certificate under which he was transferred from the wards of the workhouse to the Richmond Asylum. The death of the plaintiff, before the record came on, put an end to the action, but Dr. Jennings had to suffer the loss of all the preliminary expenses incurred in preparing for his defence. The other case was that of Manders against myself, which was voluntarily withdrawn by the plaintiff, after the record had been put upon the files of the Court. I regret to think that an impression prevails in some quarters that I compromised the case—an opinion for which there is not a shadow of foundation. Without any overture on my part, Mr. Manders wrote to me offering to withdraw the suit, provided I did not ask him to pay the costs I had incurred in meeting the charge. In agreeing to this, I felt that, whatever equitable claim I might have to be held scatheless in resisting an unfounded charge, I had no legal right to demand repayment until the action had been tried or decided in my favour, and to insist on his proceeding merely to secure this object would have been as foolish as it would have been unpleasant.

The special subject to which I wish particularly to direct your attention, is the disputed point as to whether insanity is on the increase or not. No question, I believe, is more frequently or more anxiously asked, of those who are supposed from their opportunities of observation to be capable of giving correct information, than this one; and, if we are to judge merely by statistical tables in Blue Books, and by the many new and expensive asylums which are being erected in various parts of the country, we shall be compelled to give a ready and decided answer in the affirmative. But there are other facts, pointing in an opposite direction, that modify the force of the conclusion thus hastily arrived at, which must be taken into account before we can be satisfied of its correctness. These are, the steady growth of the general population, which suggests the idea that the increase in actual numbers, which is too apparent to be denied, is not at all out of proportion to the augmented mass of the people; secondly, the fact that fewer harmless lunatics are permitted to be at

large than was formerly the case, whose numbers must consequently swell the total that fill our public institutions; and, lastly, the large number that were formerly concealed by their friends, of whose existence the authorities never had any authentic information. To this, perhaps, ought to be added the greater readiness, in modern times, to recognise the incipient symptoms of the disease, at least, among the poor, whereby patients are sooner placed in institutions for their proper care, than was formerly the case. But, after every fair allowance has been made on all these accounts, the conviction, I am afraid, will rest on most men's minds that a very decided increase in the number of the insane has undoubtedly taken place in recent times, compared to what previously existed.

Assuming, then, this to be the case, the further inquiry naturally suggests itself,—To what cause or causes is this increase to be attributed? How far are these causes discoverable? And are there any means within reach of counteracting their effects? On these points I desire to make a few remarks. No branch of practical medicine has been attracting more attention of late years than that which has for its object the prevention of disease and the preservation of the health of the community. For obvious reasons none ought to occupy a higher place in the estimation of the public. It is essentially a disinterested service. Medical men, under ordinary circumstances, find employment and remuneration in counteracting the ravages of illness, not in preventing their occurrence. But when a physician aims at accomplishing the latter object, the more successful his efforts prove the worse it is for himself. So clearly is this the case that sometimes, during the prevalence of fatal epidemics, evil-minded persons have not hesitated to insinuate that medical men have failed to use the proper means of arresting their progress, for the paltry purpose of reaping a richer harvest out of the sufferings of their fellow creatures. That such charges are mere calumnies is indisputably proved by the history of medicine in all ages. But the question naturally arises in connection with our present subject, Has anything been done to prevent the spread of Insanity? If so, why has it not proved more successful? And how far are medical men to blame in the matter?

Before replying to these questions, it is desirable to explain that the only part medical men can take in trying to prevent the spread of any disease is to enlighten the public mind upon

the subject, by disseminating correct views as to the nature of that disease, its ordinary causes, and the best means of counteracting their operation. The giving effect to that knowledge is entirely beyond their power. It rests with other parties to turn it to productive use. The State, for instance, by enacting proper sanitary laws. But their legislative enactments cannot touch any morbid agencies except those which are physical in their nature, and not even all of these. They may cause malarious districts to be drained; they may oblige houses to be built in a manner conducive to health, and with all suitable appliances for ventilation and cleanliness; they may provide an effective system of sewerage, and an adequate supply of wholesome water in towns and villages; they may prevent over-crowding in lodging houses, they may isolate sources of infection, they may prohibit the sale of noxious articles of food and drink. All this they may accomplish, as well as many other things of a like nature, but they can never prevent a man injuring himself by his own indiscretion. Still less can they succeed in preventing the operation of those causes of disease which have their origin in the mind and feelings, and which are the natural offspring of the various vicissitudes to which every man is more or less subject in his passage through life. What a wide field of accidental sources of sickness is here opened up to view! how subtle! how varied! how powerful!

Is it not perfectly plain that the efforts of scientific philanthropists, even when assisted with all the authority and force that law can give, can go but a very little way in securing the community in the absolute enjoyment of ordinary health? The co-operation of each individual, limiting his actions in accordance with whatever enlightened experience has proved to be essential for the purpose, is clearly a necessary condition for the preservation of his own health; and whenever this is diligently and systematically done it is generally effective. But not invariably so. Sickness and disease often come in spite of all the precautions that may be taken against them; so completely are the causes producing them beyond the cognisance and control even of those who suffer from their ravages. And if this is so as regards the ordinary ills that flesh is heir to, it is still more remarkably the case as regards the various forms of insanity. Legislative interference here is altogether powerless in providing any prophylactic. Whatever steps are to be taken with a view of securing this end must be the result of individual effort in the education of the young—by

which I do not mean merely the kind and amount of information crammed into the head of the pupil, but the whole system of training required to produce a well-adjusted balance between all the intellectual and moral faculties of which man's higher nature is composed and that physical development of the entire system which reason and observation have shewn to be the best safeguard against the occurrence of such a calamity in after life.

I do not think it is too much to assume, that if proper pains of this kind were taken in early life much good would result, and that many persons constitutionally predisposed to mental disease, either by hereditary taint or a badly developed nervous system, might pass through life without suffering an attack. But it must be confessed that the task to be fulfilled is a peculiarly difficult one, requiring a rare combination, on the part of him who undertakes the duty, of talents to discover the faults to be corrected, and of tact and perseverance to accomplish their removal. Very few parents will take the trouble of making the attempt for the benefit of their own children; even supposing them to be fully qualified for the purpose, they are seldom likely to see the necessity for such a course of training at that precise period of life when it is most likely to be effective. Speaking of hereditary predisposition, I think I may appeal to the experience of every one present when I say that few persons are found ready to admit that such a thing exists in their family, even when the fact is too notorious to be disputed. They either question the significance of symptoms indicating the constitutional origin of the complaint, when it has occurred among their connexions, or they attribute it to the operation of accidental causes sufficient to account for its appearance independently of such an origin.

I think it must be clear to every one that the only way in which medical men can give any real assistance in the accomplishment of this important social problem is by the diffusion of sound information upon all topics bearing upon the question. How far they have fulfilled this task may perhaps be disputed, but in no other way can they be held responsible for the spread of the disease. I am no advocate for medical men writing popular essays upon strictly professional subjects, because they are almost always mere advertisements of the writers; but the present topic is entirely different in its purposes and aim, and therefore is not open to the objections that may be urged against the practice.

Besides, now that physiology forms no uncommon part of ordinary education, and that popular lectures on Hygiene are of constant occurrence, I cannot help thinking that more might be done by members of the profession for the public advantage than has yet been attempted by directing attention to this particular branch of the subject, pointing out the evils to be remedied, the dangers to be avoided, the importance of guarding against the formation of habits which, however harmless in moderation, become eminently pernicious when carried to excess; and above all, the absolute necessity of having all the feelings, appetites, and passions of our nature kept well in subjection to the higher power of our moral being.

A cursory glance at the great change which has taken place in the state of society within the last century will go very far towards explaining the causes of the increase in insanity of late years, supposing it to have taken place. Ever since the time of Watt, when the steam engine entered upon its career of usefulness, a most extraordinary revolution has been going on all over the world, more complete, more extensive, and more thorough than was ever previously produced by any combination of circumstances in the known history of our race. Everywhere its influence may be traced. It is not saying too much to affirm that all the discoveries of science, all the improvements in manufacture, all the elements of human progress, characteristic of the present era, are more or less distinctly to be traced to the effects of this invention. Modern civilization, with all its innumerable appliances for the benefit of society, is undoubtedly the offspring of this happy thought. If men are better fed, better clothed, and better housed than they used to be, it is to the steam-engine they are indebted for the change. If we enjoy facilities of intercourse with our fellow men inconceivable before—if opportunities of foreign travel are no longer limited to a few of the most favoured of our race—if a cheap press is daily pouring forth its stores of useful information for the poorest of the people—if avenues of personal advancement are more widely opened to the lower ranks than was previously the case—all these are traceable to this common source as their origin. Even the changes which have been effected in the British constitution in recent times, the extension of the franchise to the lower orders, and the increased power given to the popular element in the government of the country, may be considered the indirect results of the slow and silent, but

really efficient, operation of the same cause. So many and great are the advantages—or supposed advantages—springing from this state of things, that if there were no corresponding drawbacks the nineteenth century might well fold its arms in happy complacency, and rejoice over the undoubted progress it has effected.

But the golden age has not yet returned to the earth. Civilization, with all its boasted advances, has a shadow that follows its footsteps wherever it goes, and the brighter the light in front, the deeper and more saddening is the gloom behind. In its advanced forms civilization is evidently an artificial state of existence, and the more widely our habits of life diverge from what is natural, the more is it certain to be followed by a corresponding retribution in the shape of disease and death. Vitality becomes gradually enfeebled, the balance of organic force is disturbed, and morbid influences act with increased intensity. Of all forms of disease none seem to be more largely or more plainly traceable to the development of an artificial state of living than those of the nervous system. This circumstance alone would lead us to anticipate an increase of insanity among a given population as a natural result in a direct ratio to the higher place they hold in the scale of civilization. One of the most obvious tendencies of civilization is to make men congregate together in cities and large towns, instead of being scattered at wide distances over country districts. There seems to be a law of vital gravitation producing this as real and as obvious as that which prevails in the world of matter. The condensation thence resulting is the cause of the evil referred to.

A striking feature of the present age is that it is one of incessant mental activity. All is hurry, bustle, and excitement. Men have become restless, and are ever seeking some new stimulus in the way of enjoyment, or some new discovery in the path of science. Formerly they were satisfied to jog on quietly in the easy way their fathers did before them; they lived in the same houses, cultivated the same farms, and followed the same fashions they were accustomed to from childhood. They had no real ambition; none of that feeling of discontent with present things which lies at the basis of all improvements. They did not hatch eggs by steam, or make calculations by a machine. They had implements, but no machines. They disliked new-fangled ways, and when they were told of improvements they were reluctant to adopt

them. Now all is reversed. The spirit of innovation is abroad. New inventions are continually chronicled, and every one is anxious to secure the advantage for himself before his neighbour gets a chance. Is it necessary to prove that the greater the activity of the brain the greater must be its liability to disease, and therefore to insanity?

But what is of far greater importance than the mere amount of mental activity at present prevailing, is the augmented strain upon the faculties in the shape of anxiety and effort arising from the vastly increased proportions of every form of human industry. Look where we will, we cannot fail to be struck with the fact that trade, commerce, and manufactures are carried on upon a scale of gigantic magnitude far surpassing anything that formerly prevailed. Establishments that used to be considered extensive hold a very subordinate position now compared with innumerable others that have since sprung into existence. Acres of land are covered with buildings all occupied in the production of some one article of merchandise that not long ago was manufactured by handiwork in smaller quantities for a more limited trade. Then, again, mills of immense proportions, employing hundreds of artisans, are to be seen in every direction, and devoted to every conceivable purpose connected with the comforts or luxuries of the community. The old-fashioned shops that used to confine their attention to some particular departments of trade have now nearly disappeared, while their place has been taken by palatial edifices of vast size and imposing appearance, filled with all sorts of wares, and doing an enormous business. How great must be the effort to manage any of these stupendous undertakings! Think of the innumerable details to be looked after! Think of the system which has to be kept up! Think of the ever-watchful supervision necessary to prevent the arrangement getting into confusion! Think of the vast outlay constantly required to pay the ordinary salaries of the staff! not to speak of that required for the successful working of the establishment in the way of goods and labour. Then consider the risks they must constantly be exposed to from dishonesty, neglect of duty, and want of care on the part of the employés; from the fluctuation of prices; from the competition of other houses; and from the frequent change of hands that is sure to happen where the number of persons employed is so great.

Is it not obvious that the nervous system of every one engaged in an enterprize of this extensive nature must be

kept in a state of perpetual tension far beyond anything ordinarily experienced, when the condition and system of trade was different? And is it not obvious that, under existing circumstances, sudden accidental occurrences calculated still more to aggravate that tension and produce injurious consequences are more likely to happen than under the older and less exciting course of business?

It may be said, perhaps, that the introduction of the principle of limited liability into many of the commercial enterprises of the present day must materially counteract the tendency referred to, by distributing the risk among a large number of shareholders. And undoubtedly this is correct as far as those individual shareholders are concerned, whose investments in any particular business is small, compared to the bulk of their property. But the case must be different with many, to whom even a small investment is an object of consideration; and at all events the managers of these concerns, whose character for ability, prudence and diligence is at stake, must feel the pressure as much as if the entire undertaking were their own.

The substitution of machinery for handicraft labour in the wide field of manufacture appears to be attended with a variety of consequences all tending more or less directly to increase the proclivity to mental disease in the masses of our people. In the first place it opens up employment to very young children of both sexes, which would not otherwise have existed. Boys and girls of the same age cannot be employed in agriculture, because they have not strength for the work, and if they were, the same mischief would not follow, because exposure in the open air has a bracing effect on the constitution, whereas the vitiated atmosphere of a crowded mill is decidedly injurious. In agriculture too, the weight of labour is thrown upon the muscular system, and not on the nervous. But in mills the work is almost entirely mental—watching the movements of the machine, feeding it with the raw material, and meeting the various emergencies that arise, the physical energy being exhausted by the fatigue of standing rather than by any actual exertion. Physiology teaches us that the brain, more than any other organ of the body, requires maturity of growth before it is fitted for the discharge of its proper functions. This can be effected only by age and gradual development, and any attempt to tax its powers prematurely can only have the effect of permanently weakening them.

Again, the close and constant aggregation of the young together has a tendency to excite the emotional and affective sensibilities of our nature, and to awaken the sexual passion before its proper time. The effect of this in the production of insanity need not be pointed out to anyone practically conversant with the subject. Besides, the crowding together of large numbers must render the introduction of vicious habits among them a matter of easier occurrence than it would otherwise be, while detection would be more difficult, and their spreading more certain.

But this is not all: the employment of children in factories is fraught with other evils of no less importance. Parental authority is weakened when the children spend the greater part of their time habitually away from home and among strangers. They very soon learn ideas of independence, if not of insubordination. They think they can dispense with parental care, which does so little for them, and is productive of no appreciable benefit. Selfishness is fostered by the fact of their earning money by their own labour, which they soon learn to think they have a right to do with as they please. If their earning is forcibly laid hold of by the parents, their feelings are outraged, even though it may be applied to meet the common household expenses of the family, and still more so if, as is too often the case, it is squandered in the selfish and sinful indulgence of the parents. Wherever, according to the law of Nature, a parent by his own industry provides for the wants of his family, his doing so almost invariably secures for him the respect, affection, and gratitude of his children. But where this is not the case, the child soon begins to think he owes little or nothing to his parents; he lives with him because he finds it convenient to do so, but he sees no reason why he should not leave the parental roof as soon as he is able to provide for himself, or whenever he can make a better bargain for his subsistence with anyone else. And if this is the case as regards the children, the system produces corresponding feelings of equally evil omen in the breasts of the parents. They become selfish too: they look upon their children merely as so many additional sources of income, which they may legitimately use for their own advantage. They send their children to the mill, not to benefit the children, but to enrich themselves. They do not thank them for what they earn. They seize upon their wages as a matter of right, and are ready to resort to violence to enforce the claim whenever it is disputed. If anything is wanted

to complete the picture of moral degradation, it is too often supplied when the money thus unrighteously laid hold of is squandered by the parents in the gratification of their own vicious appetites. But the possession of money by young children, which is one of the results of their early labour, is fraught with other evil consequences. The sum at their disposal at any one time is usually so small that no attempt is made to save it for any useful purpose. It is frittered away as quickly as it is possessed. Habits of unthrift result, and what might be sufficient to provide them with many real comforts, if judiciously applied, is expended in creating tastes and fostering habits that injure them through life. The public house and the cigar shop are always at hand to swallow up any spare pence at their disposal. If the use of alcoholic stimulants and of tobacco is injurious to adults, and leads to the production of insanity, no reasonable doubt can be entertained that it must be still more so in the case of all young persons whose nervous system has not yet reached its full development.

This loosening of the family bond—this upsetting of parental authority—this perversion of the natural feelings and affections, indicates a state of mind very favourable to the development of insanity, when circumstances arise calculated to produce it. It lies at the very root of Socialism.

The republican motto, "Liberty, Equality, Fraternity," however unobjectionable in its proper sense, implies, to all persons destitute of proper religious principles, resistance to constituted authority, and the very worst form of anarchy. What was the outbreak of communism that saddened the siege of Paris at its close, but an instance of madness on a large scale seizing the populace of the city, saturated with these pernicious principles, and excited to the utmost by the privations and dangers they had been so long exposed to? And what was then exhibited on a large scale may assuredly occur also in the case of individuals infected with the same ideas, whenever they are subjected to equally severe trials.

Another remarkable feature in the present day is the application of the principle of association, or co-operation, for the promotion of common objects. United effort is made to accomplish results unattainable by individual exertion. Capitalists combine to prosecute schemes of productive industry; the labouring classes combine for the protection of their own interests against the dangers of competition. I do not stop to discuss the abstract question involved in these

associations. I merely notice the fact in connection with what is so clearly traceable to them as their source. The strikes and lockings out that have lately become so common, and which have assumed such gigantic proportions, directed and controlled, as they often are, by unscrupulous leaders for their own selfish ends, without the least consideration for the real interests of their dupes, have been the cause of widespread and prolonged distress, by disturbing the course of trade, and producing an amount of mental and physical suffering that has often been followed by mental derangement.

Then, again, the accumulation of wealth in the hands of large capitalists, which has taken place of late years to an extent far beyond anything the world ever witnessed before, is a circumstance that must operate very largely to the development of insanity. Not that the possession of money is necessarily an evil. It is the feelings it excites, the anxiety it occasions, the luxury and vices it developes, that do the mischief. Multitudes of men enjoy large incomes with positive advantage to themselves and the community, because they know how to use them with a liberal hand in works of charity and usefulness. But it is not so with every one. The infirmities of our nature turn what might be a blessing into a curse. Many colossal fortunes are made rapidly by men who have risen from the lower ranks, whose want of education unfits them for enjoying pleasures of a refined character, and whose want of taste prevents their using their wealth conformably to the altered circumstances of their position.

Not unfrequently, the money thus acquired is spent even more rapidly than it was amassed. While the fathers are busy at their work, their sons are sent to expensive schools, where they are indulged largely with the command of money to compensate for the drawback of their humble origin, and to render them more acceptable companions to young men of higher birth. The consequences may be easily foreseen. Gradually they are led on from one degree of folly and extravagance to another until they fall an easy prey, either to their own acquired evil habits, or the temptations which beset their path.

But the abuse of money is not confined to men of great wealth in the higher walks of life. Workmen of every kind, and particularly skilled artizans, never were so well paid as they are at present. Their hours of labour have been reduced while their wages are higher, yet, it is certain that they are

not nearly so well off as they used to be. They are more idle, more intemperate, more unthrifty. The demand for work being so great, they feel their position secure, no matter how they act; hence they are very little concerned in living prudently, and turning their advantages to a good account. They give a loose rein to their appetites, spend their wages in drink, and find the greater leisure they enjoy a snare instead of a benefit.

Coupled with this is to be noticed the amazing extent to which the spirit of speculation pervades every class of the community. This is a natural consequence of the feeling with which money is regarded. It is universally looked on as the *summum bonum*—the one great object for the attainment of which every sacrifice is to be made. The love of display, the growth of luxury, the haste to be rich, makes men eagerly grasp at every ready means of securing the prize. Many circumstances contribute to facilitate the gratification of this passion. The multiplication of public companies, the reduced amount of the nominal value of shares, and the system of time bargains, have all helped to bring temptation to the door of many a poor man, who would have been saved the danger had the price been higher, and the bargain one for ready money. Once the first fatal step has been taken, too often no alternative remains but to plunge more deeply till he is overtaken by ruin and disgrace.

Of a kindred character is the enormous increase that has taken place in the passion for horse-racing, and in the opportunities for its gratification. I speak at random, having nothing to guide me but what appears in the daily papers, but I believe I am not wrong in saying that within the last fifty years the number of races throughout the United Kingdom has vastly increased, and the number of spectators has augmented still more. This latter is plainly to be attributed to the introduction of railroads and the facilities of locomotion. But both together may be taken as proving that betting on the turf has assumed an extent and magnitude far beyond anything formerly known. Nor are bets confined to persons present at the race, who use their own senses to guide them, who may be supposed to take an interest in the event, from the opinion they have formed of the comparative qualities of the horses; they are now made in a large number of instances by persons at a distance, who never see the horses, and who act solely on the prophetic announcements of a sporting newspaper, from the mere spirit of gambling.

It is, in fact, a regular system—a kind of trade venture—conducted by agents who charge a commission, and guarantee, or profess to guarantee, the party entrusting them with the order against all risk of loss.

From the considerations thus imperfectly put before you, I think I am warranted in concluding that there is an amount of brain work going on in the present age far different in kind from, and far greater in degree than, any that was ever known before, and which must play a very important part in predisposing the subjects of it to attacks of insanity. And when we come to ask ourselves the question, What can we do to counteract the evil? I fear the answer to be given is, that, practically, we can do very little. The whole is the result of forces far beyond our power of alteration or control. We can no more change the mechanical and commercial character of the age than we can arrest the sun in his course, or put back the hands upon the dial plate of time. Nor, even if it were possible for the world to return to the condition it was in a century ago, would any of us be willing to give up the advantages of our present state to secure such a result. It must not be forgotten that the evil complained of arises, not from mechanical contrivances in the abstract, but from the abuses connected with their working and incidental to their introduction. The difficulty of counteracting these latter springs from the corruption of our fallen nature, which refuses to make the sacrifices necessary for the purpose. As a rule, self-interest will not give place to the good of others, nor will even a momentary gratification be surrendered to secure a more lasting advantage afterwards. All ranks and classes of men are alike chargeable with this fault, and nothing but the power of a higher principle, acting upon the conscience, purifying its motives and conduct, can ever produce a different result.

In calling attention to the mental and moral aspects of society as it exists at present, and in assigning to them some influence in increasing the amount of insanity, I wish it to be understood that I regard them merely as predisposing causes, which operate solely by inducing a state of the nervous system that is more easily affected by other agencies than it would naturally be.

In my opinion the monster evil of intemperance, with its associated vices and its accidental accompaniments, is the greatest of all the causes producing the estimated increase. Sometimes it is alone accountable for the overthrow of reason ;

on other occasions it aggravates and intensifies other causes operating along with it. How to destroy this hydra-headed monster is the one social problem of the day, and when this has been satisfactorily solved, but not till then, I fear, we may hope, not unreasonably, to see a mighty reformation effected, not as regards insanity alone, but every other ailment that afflicts our race. Without undervaluing the efforts so perseveringly made by temperance advocates and other philanthropists, I cannot help saying that much more might be effected by the Government of the country than they seem willing to do, by reducing the number of houses licensed for the sale of intoxicating drinks, limiting the hours on week days in which they are permitted to remain open, and closing them altogether on Sundays. Stringent rules of this kind are resisted on the ground that they interfere with the liberty of the subject. But the whole system of granting licenses is based upon the assumption that some restriction is necessary in regard to this particular trade, and the only dispute is as to the extent to which these restrictions shall reach. Again, it is objected that men cannot be made sober by Acts of Parliament. In one sense this is true, but not in another. If men are once made drunkards by Acts of Parliament presenting them with temptations they cannot resist, it is impossible to change them into sober men again by new regulations. But the design of the measure is to prevent the change of sober men into drunkards, and this may be done, to a considerable extent, by legislative measures protecting them from the formation of habits, and by keeping temptation out of their reach.

Gentlemen,—I cannot close this address without expressing the very high sense I entertain of the value of this Association. Whatever may have been the objects originally aimed at in its formation, the effect of its existence has been undoubtedly to improve the condition of the insane throughout the kingdom, and to promote their best interests. It has impressed those who undertake the care of this afflicted class with a deep sense of the importance of the work in which they are engaged, and of the responsibility binding them to the right performance of their duty. It has set before them lofty aims and a noble ambition; it has given them every encouragement to exertion by assuring them of the esteem of those best qualified to form an opinion of their merit, and by means of its Journal it has converted the limited experience of each of its members into a common stock fund of infor-

mation for the benefit of the rest. No one can take a deeper interest in the accomplishment of these objects than I do. It is now exactly sixty years since I was first brought—a child of only a few years old—to the asylum then recently placed under my father's management. My mother was dead, and owing to the circumstance that my father never kept a separate table for his family, I was thrown into closer contact with the inmates of the establishment than usually falls to the lot of children similarly circumstanced; and although there are drawbacks and dangers inseparably connected with such a life, I am here to say that it is not all gloom nor all disadvantage. It has its bright side as well as its dark. In almost all similar institutions of any size there are to be found some of the best and noblest of our race—men of gifted intellect, of high attainments, and of blameless lives. We know not why it should be so, but in the mysterious providence of God the shadow of this cloud is occasionally permitted to darken the path of some eminent for their virtues and their piety. It was my privilege to be indebted to some of these for many acts of kindness, and for much pleasant companionship. My earliest lessons in the Latin language were imparted by one during the short period of his residence at Farnham House, whom I shall ever remember with affection and esteem. Another instructed me, at a later period, in mathematics and the higher branches of science. Many others shared with me all the pleasures of my boyhood. These things have made an impression on me which I can never forget, and everything which has a tendency to benefit other sufferers of the same class has my warmest sympathy and approval. May He who alone can make your labours successful abundantly bless them to this end, and may this Association long continue to prosper with increasing reputation and augmented usefulness.

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*Skæ's Classification of Mental Diseases. A Critique.* By J. CRICHTON BROWNE, M.D. Edin., F.R.S.E., Medical Director, West Riding Asylum.

Of all the classifications of insanity with which we have been afflicted in recent times, none has been more diligently vaunted, or more frequently obtruded upon attention, than that of the late Dr. Skæ. Emanating from an able and accomplished physician—not in the first blush of his juvenile enthusiasm, but in the maturity of his powers, and the ripeness of his experience—it at once commanded respectful consideration, and was placed in a position of authority. And there, in the progress of time, a strong body of sentiment has gathered about it. Dr. Skæ's old pupils, with a fervour which speaks volumes for his influence over his colleagues, and for their loyalty and gratitude, now rally round it, and vigorously repel any attack upon it, and even any approach to it for the purpose of a critical examination. Under their jealous guardianship it has become a sacred edifice—a monument of wisdom which may be adorned or enriched by the initiated few, but which it is sacrilege in the vulgar to attempt to demolish. Its great principles have been pronounced binding by the œcumenical council of Morning-side, and he who profanely questions them places his promotion in jeopardy. Fortified, developed, illustrated, by the labours of many distinguished followers, this classification of Dr. Skæ's is extolled by some on all possible occasions, and there is an undoubted danger that it may be somewhat widely adopted.

I say a danger that it may be widely adopted because I do not think it has been as yet accepted to any considerable extent beyond the immediate circle of Dr. Skæ's friends. I cannot see that there is any sufficient warrant for Dr. Mitchell's assertion that this classification has taken possession of the medical mind. The only evidence which he adduces in support of his assertion is, that during recent years a number of papers have appeared in the medical journals labelled with names which Dr. Skæ made use of in his classification. But, if Dr. Mitchell had looked a little more closely into the matter, he would have seen that of these names some, such as Puerperal Insanity, Epileptic Insanity, and Hereditary Insanity, had been current in medical literature for years before Dr. Skæ put pen to paper, while others

indisputably of Dr. Skæ's own invention, such as the Insanity of Pubescence, and Rheumatic Insanity, have been employed only by his pupils and immediate friends. The fact is that, so far from having taken possession of the medical mind, this classification has not, up till the present moment, obtained a sure footing in the medico-psychological mind. I believe I shall be correct in saying that there are not a dozen asylums in England to-day in which it is in actual use. But incessant laudation must have its effect. We are all prone to save ourselves trouble by picking up wisdom at second-hand, and to dispense with ratiocination when we can defer to authority. What is constantly dinned in our ears is ultimately organised in our brains, and pertinacity does the work of conviction. Little by little, point by point, we yield to the encroachment of an active and unopposed propaganda, until we have almost imperceptibly changed our faith. And thus it is that there is some risk that Dr. Skæ's classification may gradually, to a certain degree and for a time, replace those classifications that have preceded it, and that still are incomparably superior to it. Its merits are being perpetually paraded by some of those who are contributing most freely to the literature of medical psychology, and who, by their pathological investigations, obtain a title to speak with weight on such a subject, with those, at least, who draw no nice distinctions between powers of observation and philosophical acumen. Its deficiencies have never been thoroughly exposed, and the scattered objections which have been from time to time taken to it have never been urged with sufficient force to overthrow so pretentious and compactly supported a system. Among the younger brethren engaged in the study of insanity, this boldness of advance and feebleness of resistance are likely to have a powerful effect in securing sympathy for the new classification, and so it seems desirable that it should be more strenuously attacked than heretofore, and that those who regard it as erroneous and mischievous should set forth their reasons for so doing. No doubt, in due course, this system, like all other false systems, will crumble to pieces, owing to its own inherent weakness; but seeing that, in the meantime, much evil and confusion may be wrought by it, we cannot be content to wait for the process of natural disintegration, but must anticipate that, if possible, by the shock of argument.

In undertaking the ungrateful, but necessary task of assailing Dr. Skæ's classification, I would desire to pay a tribute of respect to his memory, and to protect myself

against the misrepresentations of any injudicious *protégé*. Dr. Skae himself, generous and open-minded as he was, would have been the last man to misinterpret the motives of any honest antagonist, or to describe a criticism of his scientific views, even so soon after his decease, as an attempt to throw dirt upon a new made grave. Skilled as he was himself in the weapons of attack, as his onslaught on the phrenologists showed, he would have respected hard hitting even if directed against his own progeny, and would have admitted that a contempt for his classification was not incompatible with a sincere esteem for himself, and for his achievements in other directions. Better than idolatrous worship is a discriminating allegiance, and more complimentary to the memory of the late Dr. Skae do I hold it to be to agree with, and to differ from him, than to receive implicitly his every dictum. But it may be suggested that this is his chief dictum that is objected to, and that disrespect to it means disrespect to him altogether. To which I would reply, that the estimate of this as his chief dictum was only formed apparently in his declining days, that no man can at any time justly appraise his own work, and that even were this his chief dictum, I might still discard it, and reverence his minor performances. Berkley valued himself most of all upon his Tar Water, and surely it is allowable to smile at his therapeutic extravagance, and yet to make genuine obeisance before Alciphron, or the New Theory of Vision. Yielding, then, to no one in my veneration for the much that was admirable in the late Dr. Skae, I shall nevertheless unflinchingly disparage his classification of mental diseases, believing that whatever his claims to the remembrance and gratitude of posterity may be, this is assuredly not the pedestal upon which his fame will rest. Philosophically unsound, scientifically inaccurate, and practically useless, this classification is doomed sooner or later to oblivion, and not all the efforts of all its votaries can do more than postpone its fate.

In examining into the character and capabilities of Dr. Skae's system, I shall endeavour to bear in mind and to deal with any arguments that have been adduced in its favour, either by its author or its sponsors, since it was first propounded in a definite shape in 1863. My comments, however, will be particularly addressed to Dr. Skae's Morisonian Lectures, published two years ago and edited and annotated by Dr. Clouston, which may, I think, fairly be taken as the most complete and well digested summary of all that can be said

in favour of the classification. That these lectures were intended to be the great bulwark of Skae's system is evident, and if, therefore, they are successfully assailed, the system may be said to be vanquished. I shall then endeavour, step by step, to meet the meagre show of reasoning which these lectures present, only glancing aside occasionally at any collateral support that may seem to deserve attention.

At the very beginning of his Morisonian Lecture, Skae plunges into the question of classification. He lays down no general principle to guide us, in proceeding from the confused and complex to the distinct and constituent, in our study of mental disease, but he commences by condemning emphatically the method of classifying the insane offered by Pinel and modified by Esquirol. This method he intimates is unsound in principle, and most unsatisfactory and uncertain, and the grand objection which he urges to it is that it is a classification of symptoms. In order to clear the way for his own method, and to show the necessity for a new classification of the insane, he sets forth the errors and deficiencies of the method of classification previously in vogue. If then it can be shown that these errors and deficiencies are in great measure imaginary, and have no real existence, the *raison d'être* of Skae's method is removed, and an important step is made towards its demolition. Let us search then into the validity of his objection to Pinel's method as modified by Esquirol.

First of all, he says, this method proceeds by a classification of symptoms and not of diseases, and no exception can be taken to the correctness of the statement. But, is it an objection to the method that it does so, and is Dr. Skae prepared to supply us with a classification of diseases themselves? There can be no question that, could we precisely, during life, specialize and localize the discharging and destroying lesions of the cerebral hemispheres—those subtle brain changes upon which insanity immediately depends—these would form the surest basis of classification. All symptoms, physical and psychical, would then fall into their proper places, and the safest indications for prognosis and treatment would be afforded. But the conditions and movements of the anatomical substrata of ideas and feelings in health and disease are, and must always remain, absolutely beyond our ken for clinical, if not for all, purposes. Parallel as mind and nervous action invariably are, we are still incapable of conceiving how they are related, or of ascertaining

what modifications of the cells and fibres of the nervous system are connected with derangements in the processes of the mind. Day by day it becomes more apparent that we shall never accurately make out the molecular changes which correspond with mental aberrations. The intricate researches of our microscopists are revealing to us degenerative results, rather than efficient causes, and we are still as far as ever from mounting a delusion in Canada balsam, or from detecting despondency in a test-tube. The convergent tendencies of all nerve degenerations make it improbable that we shall ever arrive at a satisfactory knowledge of the pathological consequences of those nutritive and functional disorders of the supreme nerve centres, upon which the majority of cases of insanity depend. Much more unlikely is it that we shall ever arrive at any direct knowledge of these nutritive and functional changes themselves. The only mode in which we can approach them is inferential, through the symptoms in and by which they are exhibited. It is clear, therefore, that these changes can furnish no direct assistance in the classification of the *insaniæ*, and that we must be content to seize upon the signs and symbols of insanity, and by a thoughtful analysis and synthesis of these to distinguish as well as may be their cerebral starting points. There is no force, therefore, in Dr. Skae's objection to Esquirol's system, that it is a classification of symptoms and not of diseases. As reasonable would it be to object to the classification now received in the science of Botany, that it is a classification of characters, and not of plants. Real entities are beyond our grasp, and we must be content to deal with sensible qualities. How much nearer to a knowledge of diseases Dr. Skae's novel system brings us we shall presently discover.

Looking into the matter a little further, it dawns upon us that Dr. Skae's mind must have been in a state of confusion as to the real significance and relations of symptoms. He seems to think it enough to condemn Esquirol's system to show that it is a classification of symptoms, or, more precisely, of mental symptoms; and he advances no reasons for believing that symptoms are an impossible basis of classification beyond an analogy, which is worthy of careful inspection. This analogy has reference to fevers. "To classify the *insaniæ* by their mental symptoms is very much the same thing," says Dr. Skae, "as if we were to classify deliriums into high or raving delirium, or muttering delirium, or wandering delirium, instead of classifying the diseases of which

these varying forms or degrees of delirium are merely symptoms."

Now, it is remarkable that here, in the first place, Dr. Skae unwittingly vindicates the mode of procedure which he is pronouncing futile. To show how preposterous any classification by symptoms is, he enumerates several varieties of one of the symptoms of fever, and he turns from them with scorn to the fevers themselves. "We speak of inflammatory, and typhus, and typhoid fevers," he says, and curiously enough these fevers generally correspond with the kind of delirium which he has named; inflammatory fever with high delirium, typhus fever with raving delirium, and typhoid fever with muttering delirium. It thus appears that the very symptoms which are dismissed as forming no foundation for division, guide to the very same division as is sanctioned by the system of which Dr. Skae approves. Apart, however, from this coincidence, the comparison which he draws is disingenuous and indefensible. He classifies fevers by a *secondary* symptom—the delirium—to illustrate how absurd it is to classify mental diseases by a *primary* symptom—the insanity. Dr. Skae must have known that we may have fever without delirium, but that we cannot have insanity without mental symptoms. He ought to have known that a classification of insanity founded upon mental symptoms can only be fairly contrasted with a classification of fevers founded upon the pyrexia. But such a contrast is not favourable to Dr. Skae's views, for fevers can be, and are, accurately classified by the range and variation of temperature by which they are symptomatised. But further than this, what does Dr. Skae mean by inflammatory, typhus, and typhoid fevers, except certain associations of symptoms? Did he suggest that we have arrived at the pathological entities in these diseases, or that we recognise, name, or treat them by any other method than an observation of symptoms? There is positively some difficulty in realising the state of bewilderment to which Dr. Skae and his pupils have consigned themselves on this subject. Claiming, as they do, without a shadow of right, to be regarded as the first to insist on the great truth that insanity is a disease of the brain, they yet, with consummate inconsistency, protest against any attempt to apply to insanity the same method of classification that has been applied to diseases of all other organs. Doubtless they would readily admit that diseases of the heart can be recognised and grouped, and their course

predicted, and their treatment suggested, by the clinical observation of the changes which have taken place in the outward perceptible signs of the functional activity of that organ. But, with reference to diseases of the brain, they will make no such admission. Changes in the outward perceptible signs of the functional activity of that organ must be ignored, say they, in recognising, naming, and arranging the diseases to which it is liable. The classification of Esquirol was unsound, say they, because it was founded upon clinical observations. And they go even further than this, and reverse the first great canon of all classification, which provides that, in the various groupings of resembling things, preference must be given to such as have in common the most numerous and the most important attributes. Preference must, according to them, be given to those groupings which have in common the fewest and the most trivial attributes. Sinking the mental symptoms, they devote their attention wholly to those circumstances in insanity which have a minimum significance.

We are told that it is always easy to find fault with a classification, and that as there are hundreds of possible ways of arranging any set of objects, so something may always be said against the best, and in favour of the worst of them. This being so, surprise may well be felt that Dr. Skae, and those who think with him, have, after all, so little to say against Esquirol's classification of insanity. Their only general objection to it is that it is founded upon symptoms, and that we have already disposed of; and their only particular objections are three in number, and these we shall proceed to consider. These particular objections, unsubstantial though they be, imply a partial appreciation—nowhere, however, definitely expressed—of the aim and object of a classification of mental diseases. They betoken a partial appreciation of the truths that medicine is a practical science, that in it knowledge must be selected and arranged with reference to the needs of human beings and the guidance of conduct, and that any classification in medicine, most of all a classification of mental diseases, must be practical in its aim, and instrumental in aiding us as physicians charged with the treatment of mental maladies. I shall have occasion hereafter to make use of these admissions, but meanwhile let us see what weight is due to these particular objections, individually considered.

The first of them is that the various so-called forms of

mental disease (in Esquirol's classification) merge gradually into each other, from which we are intended to deduce that the so-called forms are not forms, and that the classification is not practically available. "How many experts in this department of medicine would agree," asks Dr. Skae, "in certain cases of mania, as to whether they were acute or chronic? How many would agree as to cases of chronic mania and noisy dementia?" Therefore we are intended to infer, because the experts cannot agree, their criterion is not trustworthy. But if we look again at this first objection—that the so-called forms merge into each other—we shall, I think, feel satisfied that it is the statement of a fact, and not the revelation of a fallacy. There are no hard and fast lines in nature, and yet we are bound by a law of our being to classify nature in her every phase. Day merges into night, summer into winter, and yet we not unsuccessfully distinguish hours and seasons. Species of plants and animals merge into each other, and yet species are found to be convenient distinctions. Pneumonia merges into bronchitis, and yet these two diseases are appropriately differentiated. And all who have studied the functions of the great nerve centres will allow that these gradually merge into each other. Indeed, as regards the functions of the nervous system, it would be vain to essay as precise a classification of them as we make of plants, animals, or minerals. They merge into each other in every direction, and are incessantly intercommunicating. And yet broad contrasts are distinguishable between them, and upon these we are justified in constructing such a classification of them as is practicable in health and disease. A classification of some kind is needful, and we need not be withheld from making one because our lines of partition will be artificial, vague, and shifting. Reflex actions, sensori-motor movements, and instinctive manifestations merge into each other, and yet no one will dispute that they are wisely divided from each other and considered apart. And so, although cognitions, and feelings, and desires, and all the modes of consciousness merge into each other, in their normal and perverted activity, they are still divisible in a general way into groups and classes. It appears, therefore, that if the different so-called forms of insanity in Esquirol's classification merge into each other, that fact is much in their favour, and proves that they are conformable to the order of nature. We shall inquire hereafter whether the experts adverted to by Dr. Skae, or Dr. Skae himself and his own

disciples, are more competent than the followers of Esquirol to deal with mania acute, subacute or chronic, or with noisy dementia.

Dr. Skae's second particular objection to Esquirol's classification is scarcely more happy than his first one. It amounts to this, that these so-called forms change very rapidly. "What was acute mania one day may be monomania the next, and dementia the following." But change is the essence of the universe, and permeates chaos as well as cosmos. "Nothing is, and nothing's not, but all things are becoming" is the gist of the Hegelian philosophy. A man may be angry to-day, good tempered to-morrow, hilarious next day, and sullen for the remainder of the week. Are we then to consider it a defect in language that it supplies names by which to designate these changing moods? What is ulceration of the stomach to-day may be peritonitis to-morrow. Are we to discard our nosology because it distinguishes the two conditions? The absurdity of such a proposition is obvious enough. It is in the nature of many diseases, and especially of nervous diseases, to change or alternate very rapidly and frequently, and no classification would be satisfactory that did not meet the difficulties thus presented. At the same time it ought to be recollected that cases of mental disease in which such sudden transformations occur are quite exceptional, and that as a rule, melancholia is melancholia from first to last, and mania, mania. That this is so, is indicated by the fact that Dr. Skae has to go a long way back to find a fitting specimen of the alternation to which he is alluding. "About twenty years ago," he says, "I had under my care a gentleman who presented a very singular case of *folie circulaire*. One day he was full of fun and laughter, and talked pleasantly to all around him; the next day he was maniacal, raving and shouting, and threatening, tearing his clothes, and striking anyone who came near him, dirty and degraded in his habits of course, the following day he was profoundly melancholy, and the two succeeding days he was demented almost to fatuity. To what form under the old system would you refer such a case?" This sounds conclusive and triumphant. For a moment it appears that Dr. Skae has put the old system to open shame, by quoting a case in which its weakness is glaringly exhibited. The impression is that a case has been adduced, which cannot be rationally classified under the old system, but which will at once find a local habitation and a name under the modern

one. On deeper scrutiny, however, it is discovered that this impression is quite wrong. A few pages later Dr. Skae again introduces his versatile patient, and fancies, as well he may, that he hears the question, "to what form would you refer that case under your system?" It is almost impossible to believe him to be serious when he replies, "I would be quite content to take the name I gave it, and which such cases have received, viz., *folie circulaire*." Having taunted the old system with its inability to grapple with this case, having condemned the old system because of that inability, he has immediately afterwards to acknowledge the incompetency of his own span-new system to meet its requirements, and has to return to the old system for a term by which to characterise it. In all his thirty-four forms there is no place for this case, which he has therefore to distinguish by a name, employed long before his day, and founded upon the succession of the much despised mental symptoms. With singular innocence, Dr. Skae adds respecting this case, "If I had known the case at its origin, I might have traced it to some pathological cause or concomitant—such as frequently precedes similar cases." Of course, if we were put in possession of information that is denied to us, we might do many now unattainable things. But the problem is to make the best of the facts which are accessible, and the relative merits of the old system and Dr. Skae's will be decided, not by what they might accomplish under hypothetical circumstances, but by what they actually can do when face to face with existing difficulties. In that difficulty presented by the case quoted, chosen by Dr. Skae himself as a test difficulty, their achievements are without doubt conspicuously different. Dr. Skae's system breaks down miserably and at once, and Dr. Skae himself, helpless and forlorn, has to turn for assistance to that old system which he has depreciated, and which promptly responds to his appeal, and fairly meets the occasion. After such an exhibition is it necessary to say anything more about Dr. Skae's second objection to Esquirol's classification? Yes, just one word, and that is, that the argument of Dr. Skae's pupils in support of the same objection are as impotent as his own. One of them suggests that there is no such disease as acute primary mania, because, forsooth, the maniacal outburst is always preceded by a stage of despondency or stupidity. As well might we argue that there is no such thing as fever, because it is often ushered in by shivering. But the facts are ques-

tionable. All who have narrowly watched the growth of mental disease will agree that the progress of mania is sometimes a gradual crescendo movement up to the characteristic crash, without any anterior diminuendo.

The third and last particular objection which Skae propounds against the old classification is, that its "forms sooner or later partake of the symptoms of other forms." This is not very lucid, but from the context we gather that he means to point out that all incurable forms of insanity tend to dementia, and that monomaniacs, emperors, queens, &c., have often some degree of fatuity associated with their monomania. Well, this is just equivalent to the statement that all exhausting bodily diseases tend to anæmia, and that even local degenerations, when far advanced, are accompanied by poverty of blood. I confess it surpasses my comprehension to realise how such an argument militates against Esquirol's system. To Skae, however, dementia, in all its relations, is a stronghold from which he sallies forth in force against Esquirol and his adherents. To him it seems to be an omnipresent stumbling block in the way of the practical application of the old system. In many cases, he alleges, of melancholia and monomania, it would be impossible to determine whether mental perversion or mental weakness predominated, so that by some they might be classified as melancholia and monomania, and by others as dementia. Similar perplexities, alas! are not unknown in other departments of medicine. Disease, unfortunately, will not deport itself according to our cut and dry notions, in a precise and correct manner. On the contrary, it is most erratic in its conduct, and it is no new thing to find doctors differing in diagnosis, and as to the relative importance of certain contemporaneous disorders. I have known two physicians disagree on the question whether it was dilatation of the heart, or emphysema, or dropsy, that killed a patient, but surely such a disagreement should not induce us to blot these three diseases out of our nosology. Rather, it should move us to increased watchfulness, more minute observation. My own conviction is, that one half of the errors which occur of this kind, to which Skae adverts, are the result of imperfect investigation. Nothing could be more hap-hazard than the way in which mental diseases are sometimes diagnosed—a mere guess taking the place of patient explorations, and grave judgments being formed by men who would be puzzled to explain the commonest terms in metaphysics. I do not

mean to assert that this was the case with Dr. Skae's assistants, who were so discrepant in their diagnosis of dementia, that one set of them cured the disease at the rate of 23 per cent., and another set at the rate of 1.43 per cent., but I do say that it is unjust that their bungling, or divergent opinions, should be advanced as an objection to Esquirol's classification.

I have now examined, and, I believe, disposed of, all the objections that are advanced by Dr. Skae and his pupils against that old style of classifying mental diseases which it has been their ambition to upset and abolish; and, in doing so, I have abstained from entering upon any elaborate defence of the system thus assailed, because my primary purpose has been, not to vindicate its excellence, but to demonstrate the incompetency of its rival. In pursuing that purpose it has been sufficient for me to clear away the pretexts which have been advanced to justify the existence of the new system, without referring more than incidentally to the cogent arguments which might be adduced in favour of the old one. If the objections which the advocates of the new system urge against the old one have been set aside, much, but not all, has been done; for it might be that the old system is good, and impregnable to the attacks made upon it, but that the new one is still better, and more inviolable. Is this so? Is there anything especially excellent and commendable in Dr. Skae's classification?

In seeking an answer to such questions, the first point to determine is, obviously, the principle of construction in Skae's system. Dissatisfied with Esquirol's distinctions, fretted by their inexactitude, despairing of attaining through their agency reliable statistics about mental disease, Skae looked about him for a new and surer criterion of classification, and, in so doing, his eye alighted upon what he calls the *natural history* of the disease. That was a luminous idea. Dr. Skae was, I understand, an accomplished botanist, and it is not improbable that it occurred to him that he might emulate De Candolle, and extinguish Pinel and Esquirol, even as Linnæus was extinguished. The weakness of the Linnæan system was, that it took into account only a few marked characters in plants, and not the whole of their affinities, collated from a comparison of all their organs. It was a sexual system, and ignored elementary tissues and nutritive processes. The strength of the natural system is, that it takes into account every important point of structure; and so the weakness of

Esquirol's system (we may suppose Dr. Skae arguing) is, that it takes into account only one class of characters, and not the whole features of insanity. It is a mental system, and ignores bodily variations. The strength of my system shall be, that it shall take into account every attribute of insanity, psychical and physical. Finding Dr. Skae proclaiming his system as a *natural* one, again and again emphasising the designation by italics, we might infer that this was the process of reasoning in his mind and the purpose which he set before himself. Had it been so, with his powers and opportunities, he might have done a really great work; but, alas! we should be wrong in ascribing to Dr. Skae as much logic as is involved in the above simple process. Having excited our hopes of a natural system, he at once deserts his colours and goes astray. "What we are solicitous to know," he says, "is the *natural history* of the disease. . . . Is it a congenital disease? Is it one associated with epilepsy, with organic disease of the brain, with phthisis, or with atheromatous vessels?" Evidently, then, what Skae means by a natural system is a pathological one. He is to found his divisions, not upon a comprehensive survey of all the manifestations of the diseased process, but upon the bodily changes that precede or accompany insanity. This is, indeed, disappointing, for very imperfect must any classification be, founded upon such comparatively unascertained data. But still, in the hands of an able man, the meagre material attainable may be so organised as to be suggestive and valuable, and we can still, therefore, anticipate profit from Skae's pathological system. But again we are doomed to disappointment, for in a few lines it transpires that Skae's system is neither natural nor pathological, but etiological. "The basis of my classification is essentially, although not entirely, an *etiological* one." We now know what to expect from Skae's system. A classification with several bases, of which the central one is etiology, hardly deserves criticism. Of all treacherous foundations, Skae has succeeded in finding the least trustworthy.

No question will, I think, arise, that we are justified in receiving Skae's system as mainly an etiological one, and in criticising it upon that understanding. Notwithstanding its incongruities and inconsistencies, the doctrine of causes—terribly distorted—is its ruling principle. Even upon this elementary point, however, Skae and his adherents are not quite clear. Skae himself repeatedly speaks of its principle

as etiological, but Dr. Clouston has a notion of his own on the subject. "The principle," he tells us, "at the bottom of Skæ's classification, is the exclusion of everything mental or psychical connected with insanity;" and one wonders if he kept his gravity when writing the sentence, which says, as plainly as words can put it, that Skæ's classification has neither principle nor bottom. If we can conceive a classification in zoology excluding everything connected with animals, a classification in jurisprudence excluding everything connected with laws, we shall have fitting parallels to this magnificent *reductio ad absurdum*. The play of Hamlet, minus the Danish Prince, would be a full-bodied representation in comparison with Dr. Clouston's version of Skæ's classification, which, by the way, it would be very interesting to see Dr. Clouston apply practically. There are thousands of lunatics who are in unimpeachable bodily health, and whose history divulges no pathological cataclysm, who present, in short, no traces of insanity except the mental symptoms. These Dr. Clouston, by his exclusive principle, would of course pronounce of sound mind, although mad as march-hares, and dangerous as nitroglycerin. Many worried medical men would rejoice if Dr. Clouston could secure the general acceptance of his view, for how much simpler would it be, when certifying a lunatic, instead of the formidable array of facts indicating insanity now demanded, to write down, "inequality of the pupils and a thick voice," "milk in the breast and a furred tongue," or "dumb-bell crystals in the urine." How satisfactory it would be to British subjects to be deprived of their liberty upon such highly scientific and conclusive grounds.

Fortunately for Dr. Skæ's reputation, however, Dr. Clouston's version is palpably erroneous. No such principle, nor, indeed, any one principle, is at the bottom of the classification, which may be best described as a promiscuous and tumultuous congregation of a variety of principles, with etiology in the pulpit. Skæ enumerates the mental symptoms under his every form; a few forms he has founded exclusively upon them, in spite of his maledictions against them. He says pointedly "I never dreamt of cutting off the old terms" (mania, monomania, &c.), and cordially concurs in the opinion that they are necessary "to describe symptoms, and the present condition of a patient as far as symptoms go." Dr. Clouston, then, is wrong in attributing to Skæ the design of excluding from his classification everything mental or psychical

connected with insanity. In his error, however, he is very instructive, and presents a striking example of the antipathy with which those connected with his school regard everything mental. A philosophical problem is their detestation, and when metaphysics are introduced to them they display anything but the elasticity of spirit supposed to result from having one's foot upon his native heath. The name of Kant is an abomination to them, and even Herbert Spencer is regarded with some suspicion. An analysis of the psyche, or, indeed, any observation of the phenomena of consciousness, gives them uneasiness, and one of them has gone so far as to censure Dr. Maudsley for adopting a division of the mental faculties—into the affective and ideational—as demonstrable as the division of the functions of the nervous system into sensory and motor. The meaning of all this is that these gentlemen are quite at sea in their opposition to the study of mental symptoms. They have become familiar with the denunciations of the subjective method of philosophical inquiry, of the vanity of attempting to fathom consciousness by introspection, of the hollowness of metaphysical speculations, and they have failed to realise that there is an objective method of studying mind, and that an inquiry into the phenomena of consciousness or psychology is as much a science as chemistry or physiology. They have, of course, failed to realise that there may be something scientific even in the reprehensible subjective method, and that we are dependent upon it and its mental symptoms for half our knowledge of disease. What should we know of neuralgia, or of a stomach-ache, but for subjective experiences, and yet these complaints are real enough, and piteously beg for assuagement. The physician who limits himself to an outside view of humanity must remain below the level of an intelligent dog.

Receiving, then, Skae's classification as mainly an etiological one, we are in a position to discuss theoretically and practically the value and utility of the principle of construction which he has adopted. One merit, if it be a merit, it undoubtedly possesses, viz., originality, for in no other department of science has it occurred to anyone to classify by causation. Causes themselves must of course be classified, but nowhere except in the regions of madness have they been resorted to as a basis for the classification of things. The inquiry into causation in nature is usually presented as a recondite complication of influences and arrangements, some concerned, and some not concerned in the cause or

effect sought, and an arduous disentangling and eliminating process is requisite to separate the essential from the non-essential accompaniments. And even then the mystery is sometimes not solved, and it remains impossible to say what was operative, and what was inoperative in the sequence or surroundings. Seeing that this is so, that it is sometimes impossible to fix upon a true or efficient cause, in any given case, or to say which of a large number of causes is responsible for a given effect, it is evident that no more uncertain basis than causation could have been devised for a classification of mental diseases. Why, even in the simplest instances of causation, doubts and difficulties may arise. To take an example from John Stuart Mill: a man falls and cuts his head on a stone, and we should, by our first impulse, decide that the stone was the cause of the injury, but by our reflection that the weight of the man had as much to do with it as the stone. And suppose that that man became mad, as the result of his accident, it would be no easy matter to say, under an etiological system, whether his mental disease was lapidary insanity, or the insanity of ponderosity. If, then, in so simple a question such difficulties intrude, how insurmountable must be the obstacles which are likely to obstruct the way in the inductive search after the essential antecedent of so compound a condition as disease or disorder of the brain. In a large majority of instances of such disorder or disease, it is not any one cause, but a host of causes that have been at work, and ingenuity would be puzzled to single out any one cause as being more particularly responsible than others for the morbid result. Then how, in cases of insanity, is the information necessary to guide to an etiological classification to be obtained? Either the symptoms by their combination and sequence conduct infallibly back to the starting point of the disease, making plain its cause, and in that case the symptoms themselves ought to be the basis of classification and nomenclature, or the symptoms by their diversity and uncertainty of arrangement, give no guidance towards the point of origin, and in that case scientific inference is impossible, and mere rumours and conjectures must be relied on. How can we know—to take an example from one of Skae's forms—that any case of insanity is post connubial. There are only two ways by which we can arrive at that conclusion. Either depression of spirits, doubts of virility, pallor of the countenance, pains in the limbs and sleeplessness—the symptoms enumerated by

Skae—warrant its recognition as such, and if so why should we not designate the case as one of melancholia, which is a summary of the symptoms, or the statements of the patient himself, or of his relatives or friends, that the malady began after his marriage is held to determine the nature of the case. It is clear that it is in the latter way that Skae and his pupils manage their classification. They give no such list of distinctive symptoms as would enable anyone to recognise and place a case of mental disease apart from a knowledge of its history. They depend in a large proportion of cases upon the statements of the patient or his relatives. But are such statements trustworthy? Is it not a fact that they are singularly delusive, that they are often fantastical, and sometimes wilfully misleading? Is it not consonant with the experience of every practitioner in lunacy, that the patient is almost invariably at fault as to the origin of his illness, and that his relations are most perverse and stupid in their views on the same subject. I think it is Dr. Maudsley who has asserted that the relations of the insane often themselves manifest some intellectual or moral twist. However this may be, whether they are misled by a diathetic tendency, or by some rational motive, I am quite sure that they frequently supply erroneous information. And even when anxious to be honest and communicative, when restrained by no dread of exposing family foibles or taint, or of uncovering individual blemishes, they are all wrong in their etiological notions in nine cases out of ten. There are few of us who have not had to modify our views as to the causation of insanity in numerous cases again and yet again, abandoning one hypothesis after another, as fresh information has come to light, and resting on a hypothesis after all. Why, as to this post-connubial insanity, I have seen two cases of general paralysis, which were at first so classed by able men, and which on further inquiry were proved to have originated long prior to the marriages, out of the effects of which they were presumed to have arisen. The connubialism, as it turned out, was actually a symptom of the mental disease, and not its cause.

What, then, becomes of the first and paramount argument in favour of Dr. Skae's new system, that it is of universal service in practice, that it is helpful where other systems are useless? Were it so, it would indeed possess a superiority over the system of Esquirol; but is it so? We have arrived at this, that it is founded chiefly upon etiology;

that the etiology of mental diseases is so complex that in many cases we cannot single out any cause or group of causes ; and that the information respecting etiology which it is in our power to collect is eminently untrustworthy. Surely nothing more is needed to condemn the system as practically useless. If a physician imbued with this classification is unable, as I maintain he is, to place in their appropriate groups a number of cases of which full and correct histories have been given him, and must in fairness place many of them into two or three different groups at the same time ; if he is unable to place at all a number of cases of which he can obtain no history whatever—and how often have we in pauper asylums to treat cases altogether destitute of histories !—then it is indeed indisputable that his classification is a source of weakness and a snare.

To illustrate the difficulties encountered in employing Dr. Skae's classification, I shall mention one or two cases that have been lately under my own care.

A lad of nervous temperament, who had practised masturbation, while suffering from acute rheumatism became delirious, and continued, after the subsidence of the rheumatism, for some months in a state of great mental excitement, with violent choreic movements. How ought his disease to have been classified according to Dr. Skae's system ? Was it masturbational insanity, or metastatic insanity, or rheumatic insanity, or post febrile insanity, or choreic insanity ?

A man of intemperate habits, labouring under tertiary syphilis, fell down stairs, suffered concussion, and was afflicted with recurrent attacks of excitement, and convulsive seizures. Was his disease alcoholic insanity, or syphilitic insanity, or traumatic insanity, or epileptic insanity ?

A girl with a strong hereditary predisposition to insanity ; (her mother and her aunt died insane) when suffering from amenorrhæa became excited, and manifested intense eroticism and sexual desire. Was her disease the hereditary insanity of adolescence, or amenorrhæal insanity, or ovarian insanity, or hysterical insanity, or nymphomania ?

A lady, at the change of life, in a weak and exhausted state, after an attack of gout became deeply depressed. Was her disease climacteric insanity, or anæmic insanity, or podagrous insanity ?

A man, who had applied to the police for protection, about whom nothing was known, and who declined to give any

account of himself, was brought to the asylum labouring under the delusion that there was a conspiracy to poison him, but in robust health, and free from any vestige of disease. How would his malady be classified under Skae's system?

A woman who had been a tramp, and whose antecedents were undiscovered, was brought to the asylum from a workhouse in good bodily health, but demented and silent, so that she never answered when spoken to. How would her malady be classified under Skae's system? I pause for a reply in these and hundreds of similar cases before assenting to the proposition that there is any practical usefulness in Skae's classification.

It is not that Skae's system breaks down, in a few cases, like those adverted to—for that would scarcely invalidate it—but in an enormous number. My conviction is that it is altogether incompetent to deal with at least fifty per cent. of all the cases of insanity in our public asylums, and that every extended and unprejudiced trial of it ends in woful disappointment. Not only are masses of cases left by it unassorted, but those that are assembled into specific groups are often unassembled by any resemblance or agreement except their supposed common origin, truly a slender thread by which to bind together incongruities. Fierce hot-headed maniacs are linked by it with pale, emaciated melancholics, drivelling demented with lively monomaniacs. In no groups—save those which Skae found ready to his hand and adopted, and which are not based on etiology—are the cases assembled together found to present kindred features. In no group is there any general indication for management, prediction, or treatment. For, of course, one efficient, morbid cause, may eventuate in a score of different morbid conditions, according to the diverse acting and reacting influences of subordinate co-operative causes. A party of men are exposed to severe cold; and in consequence, one has coryza, another pneumonia, a third rheumatism, a fourth diarrhoea, a fifth ague, and so on. And so a party of men are exposed to concussion, and one suffers from transient excitement, another from recurring attacks of depression of spirits, a third from general paralysis, a fourth from senile fatuity, a fifth from epileptic dementia, and all these ought to be classed by Skae under Traumatic Insanity. If his system is etiological, they must be so classed; if it is not etiological, then it ought to be described correctly. Skae himself says more than once that it is essentially etiological, but he admits also that other principles of classification

are introduced, and so, that it is a composite and piebald system, a fact which would derogate from its authority, and interfere with its reception, however good it might happen to be in other respects. The mistake of adopting an etiological basis made such incongruities, however, inevitable, for there are well-defined mental diseases—such as general paralysis—of which the etiology has not yet been fully made out.

Enough, it might seem, has been said to dispose of etiology as a basis for classification in mental disease; but there are still other considerations bearing upon the subject which it would be inexpedient to pass over. One of these is that much mischief is done by an etiological system by withdrawing attention from clinical observations, upon which alone any scientific and enduring nomenclature and classification of disease can be perfected. An etiological system dispenses with clinical observations, and, as we have seen, has recourse to hearsay and guess-work. It is of course a much simpler affair to accept the testimony of some second party that a patient's mental derangement dated from a blow on the head, and to ticket it traumatic insanity, than it is to watch the patient's habits, manners, and conduct, gauge his capacity, test his memory, probe his intellect and feelings, note all his physical conditions, and to deduce from the observations made that he is labouring under primary dementia due to functional cerebral disorder, or organic dementia with cerebral atrophy, or recurrent mania with irregularities of vascular supply. And thus harm is done, and a nondescript slipshod method is substituted for rigorous induction whenever etiology is accepted as a classificatory principle. So out of place, injurious, and useless in this relation is etiology, that I have often wondered that semiology has not, with equal plausibility and rationality been employed in the same way. Every disease has an after as well as a before. Why should not diseases be classified by their effects? Many diseases not only run their own course, but occasion changes more or less permanent in the viscera or constitutions of the persons whom they attack. Some of these after effects—those of scarlet fever, smallpox and syphilis—are exceedingly definite. They must certainly be comprised in any consideration of a disease as a whole, but who in his senses would make them a basis for a classification? Like etiological facts, they are not present at the very time when classification is most urgently demanded. They are often inextricably interlaced. They

admit of all sorts of speculative uncertainty. A classification, to be of any value in medical science, must be available at the moment when the physician is brought face to face with disease, and must be founded upon skilled observations, and not rumour, nor even upon the fruits of elaborate research. Arrived at in any other way than by skilled observations, the act of classification will be performed with hesitation and doubt, and will not, perhaps, be fully achieved until the patient has been placed, by recovery or death, beyond any personal interest in it. Symptoms must be the basis of classification. A man who being hungry is presented with a cocoa-nut, recognises it, and names, by its size, form, colour, surface, marks, &c., and probably proceeds to eat it. He does not suspend his judgment until he has ascertained by laborious inquiry and correspondence that it was imported from the South Sea Islands, and was gathered from a tree growing on the sea-coast sixty feet high, with pinnate leaves, male and female flowers, a three-celled ovary, and a one-celled drupe. He finds it more convenient to trust to symptoms than to etiology. No one would think of classifying plants by the soils they grow in, nor animals by the climates which they inhabit.

I have already alluded to the fact that Skae's classification, although mainly an etiological one, is not entirely so, but is in part founded upon other besides causal conditions; and I again advert to this feature in it to put it forward as another substantial objection to the plan of construction followed out. I say plan of construction, when I ought, perhaps, to say hap-hazard style of construction, for the pith of the objections which I am now urging is, that there is no plan nor architectural symmetry in the classification. No design runs through it; there was no comprehensive scheme in its author's mind, and one knows not whether to find fault most with the conception or the workmanship. Nowhere else, save in medico-psychological science, would a hybrid like this have been tolerated for a day. The foundations are shifted at least five times, and stumbling and blundering pervade the whole of it. Some forms have been borrowed from the older nosologies. Some, such as Nymphomania, Satyriasis, and Hypochondriacal Insanity, are formed entirely upon mental symptoms. Some, such as the Anæmic and Pellagrous forms, are founded entirely upon bodily symptoms. Some, such as insanity from brain diseases, and phthisical insanity, are founded upon pathological changes. Some, such as the

insanity of Oxaluria and Lactational insanity, upon constitutional conditions. Some, such as Syphilitic insanity, upon tissue degeneration. There is no consistency, no harmony in the classification, no trace of that insight which Plato calls "seeing the one in the many, and the many in the one."

And neither is there any completeness in Skae's classification. Untrammelled as he was by considerations of symmetry or consistency, free to introduce any new principle at pleasure, he might at least have built up an exhaustive classification. Most surprising, therefore, is it to notice that even in its etiological section, the classification is imperfect and contains gaps. It would have been no arduous matter to sum up all the known possible causes of insanity, and to connect those with supposed forms. But this has not been done, and consequently there are forms of mental derangement etiotogically considered which can find no refuge even in the prodigious mixture which Skae has evolved. Insanity has been produced by lead poisoning, so there ought to have been a plumbic insanity; it has been produced by the fumes of mercury, so there ought to have been a hydrargeric insanity; it has been produced by *Cannabis Indica*, so there ought to have been the insanity of bang; it has been produced by drinking salt water, so there ought to have been the insanity of the chloride of sodium, and so on. It is inexcusable that so many omissions occur. If a fear of unduly lengthening the list led to the exclusion of some rare forms, room might have been obtained by merging some of the forms, which still stand there and which overlap each other to a ridiculous extent, so much so indeed that they may be said to be superimposed upon each other. No sound principle, etiological or otherwise, can justify the distinction drawn between puerperal insanity and the insanity of pregnancy. If puerperal insanity is to be divided at all, there are at least four varieties that merit exaltation into distinct forms. The incompleteness of Skae's classification is another indication that he never took a wide, all-embracing survey of the district which he undertook to map out for the benefit of mankind. He made erratic inroads upon it, and fenced off irregular allotments here and there, but he left some territory untouched, and the end of his labours is turmoil and bewilderment.

Besides the primary and fatal objections to Skae's classification of insanity already advanced, there are other general

objections to it that militate seriously against its adoption, and that prove it to be a superficial and unmethodical arrangement. For instance, there is no gradation in it. He lays down thirty-four species, or as he calls them, natural groups of insanity, but he does not associate them into general classes of higher generality. The natural group is his narrowest and at the same time his widest term. He leaves the investigator to wander at random amongst these natural groups, and to stumble as best he may upon the one wanted. There are no families, tribes, divisions, nor indications of any relation subsisting between the different groups. There is no connotation of points of similarity among groups as well as among individual cases, but each is arranged as a solitary individual concept. But it is one of the objects of classification to save repetition in its description of objects; to give once for all, by full and exact definition, the attributes which are common to the whole of a large aggregate, and to state afterwards merely what is special to each individual of the aggregate taken apart. And it is a well understood principle, that the more complicated the objects to be dealt with, the further must the gradation in their arrangement be carried. There ought to be broad ways of approach, with regular halting places towards the specific object. And just as there is no gradation in Skae's classification, so there is no serial arrangement. There is no order or succession in the different groups composing it, any one of which might be placed first or last with equal propriety. There is no sort of affinity between them, and juxtaposition is of no moment with reference to them. But surely the intelligent study of insanity requires a definite succession in the groups into which it is divided, corresponding to the successive complexity of the phenomena by which it is recognised. And surely no system of classification can be regarded as otherwise than futile which rejects the immense assistance of a serial arrangement. A linear order of progression has been observed in every individual science and in science as a whole, and nowhere may it be more clearly traced out than in biological science, the facts of which can only be comprehended when marshalled in the order of their dependence. Tissues, organs, functions, exhibit an orderly development from the simple to the complex, and deviations in the functions of the highest nerve centres can never be fruitfully studied except on the lines of normal evolution. The very highest nerve centres are but more intricate rearrangements

of lower ones, and these of still lower, until the lowest is reached—that lowest representing single impressions and single movements. There is a wide interval between the idiot and the maniac, and between these there are numerous intermediate degrees; and at any rate no classification of mental perversions can be approved unless it involves some sort of serial arrangement.

I have briefly set forth a few of the more pressing of the general objections which at once suggest themselves to the plan of construction adopted by Dr. Skae in framing his classification, and I shall proceed next to expound, with even greater brevity, a few of the crowd of objections which instantly start up to the details of the system. First of all, there is the objection which has been before advanced by Dr. Maudsley and others, that at the tail of the classification there is a miscellaneous lot—idiopathic insanity, a refractory ward into which are forced all recalcitrant cases that will not submit to the discipline of classification. Into this limbo march all cases that cannot be identified as belonging to any of the other thirty-four circles of madness, and in it we may suppose there is a strange and motley mob. We are told by Dr. Clouston that only one-tenth or one-twelfth of the whole number of the insane require to be placed in this group, but a medical friend of mine who tried on a small scale to apply Skae's system, and survived the attempt, has assured me that about thirty per cent. of asylum cases ought to be included in it. That, at least, was the proportion of the residuum of cases which remained after his experiment, which could not, by the most strenuous efforts, be squeezed into any other group. But whether it embraces thirty or only ten per cent. of the insane this is a most important group. If out of thirty-five groups one absorbs ten per cent. of all cases, there remains only an average of less than three per cent. for the other groups, and the group absorbing the ten per cent. is evidently one of great, if not of the first, magnitude. We are entitled, therefore, to some description of the features of idiopathic insanity, fuller and more instructive than that furnished by Drs. Skae and Clouston, which merely amounts to this, that it originates in moral causes and sleeplessness, and is of two kinds—sthenic, with symptoms of vascular action, suffused eye, throbbing temples and carotids, hard and full pulse; and asthenic, with symptoms of anæmia, emaciation, feeble pulse, cold and tremulous extremities, and so forth. It is indeed strange that

this is all these gentlemen have to say about a disease which bulks so largely in their system, and without which the insolvency of that system must instantly stand confessed.

The way in which this idiopathic insanity—this thing of shreds and patches—is defended when assailed is very characteristic of the style in which arguments are met by the sworn champions of the classification, who, of course, disdain dialectics. No one has objected to idiopathic insanity as such. No one is inclined to dispute that moral causes and sleeplessness may bring on primary disorder of the brain. The objection taken is not to idiopathic insanity, but to Skae's idiopathic insanity, which, it is maintained, is out of place in a classification such as his, and is a mere cover for a heterogeneous heap of alien, incompatible, unclassifiable cases. Missing the point of the objection, however, Skae's observations are directed to vindicate what is not called in question—the existence of idiopathic insanity. He has not a word to say in answer to the truly damaging criticism that no classification is entitled to be named as such that retains a department for irreconcilables. He has no explanation to offer of the extraordinary diversity in character presented, it is alleged, by the cases consigned to the group. What should we think of a zoological collection that had an order of idiomorphic beasts? Why even the *Ornithorhynchus paradoxus* finds its affinities.

A second objection to the details of Skae's classification is obvious in the fact that several of his forms are founded, not, as in an etiological system, they ought to be, upon some definite cause—but upon a whole course of life or period of time, so that nothing but vagueness and uncertainty is possible. Climacteric insanity is dependent upon changes extending over several years, rife with pathological risks, and it may therefore spring out of any one of a multiplicity of causes in no way related, except in the period of their occurrence. Any woman attacked by mental disease between the ages of 44 and 50 may or may not suffer from climacteric insanity. To associate as one form all the varieties of mental disease that may mark the epoch, is about as sagacious as it would be to bring together every disorder that may accompany teething—diarrhoea, skin eruptions, convulsions, and what not, and to compel the whole of them to pass as one malady—dentitional disease. Then the hereditary insanity of adolescence is also dependent upon very nebulous conditions that may come to the surface at any time between 18 and 23

years of age. The hereditary taint is operative at every moment of existence. Why should its effects in one decade be erected into a special form of insanity more than at any other? These effects, as pictured by Dr. Clouston, have nothing distinctive nor even distinct about them, and, indeed, no feasible pretext has been made out for the creation of such a fanciful form of mental derangement, or for that of its congener, the insanity of pubescence. These and other forms are founded upon circumstances and conditions so unsettled, so desultory, so protracted and unwieldy, that no reasonable being would think of employing them in a practical classification. And Skae's classification is meant to be practical if it is anything. Would it conduce to convenience to blot out diarrhoea and dysentery, and erysipelas and pyæmia and puerperal fever, and phthisis, and general tuberculosis from our nosologies, and to merge all these under one term "filth disease;" or as Skae would have put it, "post dirt disease?" Certainly not! Then neither is it advantageous to lose sight of the various diverse disorders and degenerations that may grow up at certain eras of existence, and to blend them all in one huge disease, vague in its outlines, and having only a spurious generality. Vagueness, indeed, and looseness of generalization are characteristic of the whole classification. It is quite remarkable that while Skae repeatedly betrays the fact that he regards his forms as specific entities, and not as mere departures from health, he has with reference to none of them attempted definition. Long hazy sketches are given, but brief, rigorous definitions—of which every genuine group or species should be capable—have been nowhere offered.

Another objection to the details of Skae's classification is, that in more than one instance, what may be truly a consequence of mental disease has been received as a cause, and made the basis of a form of insanity. How often do we find amenorrhœa resulting from attacks of insanity of the very kind which Skae has described as resulting from suppression of the menses? How often do we find phthisis following upon those types of mental aberration which have been represented by Skae as springing out of the pulmonary tuberculosis? Is it not now probable that in a considerable proportion of the cases included by Dr. Clouston in his statistical inquiry into phthisis in the Royal Edinburgh Asylum, the lung disease was due to defective hygienic arrangements in the asylum, and had no causal relation to the insanity?

Still another objection to the details of Skae's classification is, that in several forms, the etiological basis fixed upon is one which can have no genuine causal relation to disease. Lactation, for example, is a physiological process, and cannot of itself be the cause of insanity. If lactational insanity really existed, we should expect every nursing woman to go mad. But in the cases which, according to Skae, constitute this form, there are other morbid agencies at work. There are the weakness and anæmia due to excessive or prolonged lactation, the exhaustion and irritability of nervous shock, or the debilitating influence of some inter-current disease. The lactation is not responsible for the insanity, but the other disease-bringing circumstances which operate during the lactational period. Nor does the lactation condition impress any singular or distinctive feature upon the insanity by which it is chequered.

So much space has been occupied in merely skimming over the more flagrant errors and inconsistencies of Skae's classification, that the more occult evils and drawbacks inherent in it must for the present go unexamined. Nor is this to be regretted if enough has been said to satisfy that Skae and his pupils have taken up an untenable position, and have but lamely defended it. The plastic operation of decomposition and re-combination is pleasurable in its performance, and this classification, born of an operation of that kind, is doubtless viewed with attachment by those who have aided in its manufacture! They will resent the indictment of many counts brought against it—but the sooner they realise the justice of that indictment the better will it be for British Medical Psychology. The verdict sooner or later will be that this so-called classification is no classification, for it involves no act of comparison or judgment, but trusts to hearsay testimony, and is founded upon conditions numerous, venial, and inextricably entangled. Griesinger says, with true wisdom, "Our classification of this group of mental diseases proceeds upon the symptomatological method, and by such a method alone can any classification be effected;" and the most illustrious representative of English medical psychology now living, Bucknill, has echoed his opinion.

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*Can Unconscious Cerebration be proved?* By WILLIAM W. IRELAND, M.D., Edin., Medical Superintendent of the Scottish National Institution for the Education of Imbecile Children, Larbert, Stirlingshire.

Unconscious cerebration is regarded as so important a discovery that two well-known scientific men have contended for the priority of its publication, and while some people are anxious to give it fresh applications and illustrations, others proclaim it to the public as a new demonstration of science, accepted by physiologists, and stable enough to uphold new theories founded upon it. After having carefully considered the evidence upon which the theory of unconscious cerebration is supposed to rest, I am disposed to think that the facts, or assumed facts, may be explained in a simpler manner, and that the theory itself is superfluous and unproved. For an exposition of what is understood by unconscious cerebration, and on what grounds it is believed to exist, I have used a work called, "The Principles of Mental Physiology," by Dr. Carpenter,\* the well known physiologist, who claims to have worked out the theory in his own mind, without knowing that any other had preceded him, and whose recognised reputation is a sufficient guarantee that the argument, in his hands, is sure of being well stated. The term itself seems far from being a happy one. Dr. Carpenter tells us that it has been found readily intelligible; he objects to "unconscious reasoning" as a contradiction in terms, and yet his own description seems either to imply unconscious reasoning, or unfelt feeling; and the difficulty of finding an appropriate term for this class of operations, is really owing to the difficulty of conceiving what these operations really are. In fact, to state them clearly, is to render the theory incredible. To call thought cerebration, may show the desire of a writer to assign thought as the product of brain action; but it is neither warranted by true philosophy, nor by the popular and scientific uses of speech. When the liver secretes bile, one does not say that it hepatates; or when a man breathes, we do not say he pulmonates.

Dr. Carpenter tells us that he was led into the train of thinking which brought him to formulate his theory by what he calls automatic motion; and it was by doubting

\* I have also used Dr. Carpenter's "Principles of Human Physiology." Fourth Edition, London, 1853.

the correctness of Dr. Carpenter's explanation of automatic motion that I was led to disbelieve in unconscious cerebration. This explanation may be given in his own words—as Paley says:—"A child learning to walk is the greatest posture master in the world." Yet, when this co-ordination has been once established, the ordinary movements of locomotion, though involving the combined action of almost every muscle in the body, are performed automatically, the Will being only concerned in starting, directing, or checking them. Of this we have familiar experience in the continuance of the act of *walking* whilst the attention is occupied by some "train of thought" which completely and continuously engrosses it. Though we set out with the intention of proceeding in a certain direction, after a few minutes we may lose all consciousness of where we are, or of whither our legs are carrying us; yet we continue to walk on steadily, and may unexpectedly find ourselves at the end of our journey before we are aware of having done more than commence it. Each individual movement here *suggests* the succeeding one, and the repetition continues, until, the attention having been recalled, the automatic impulse is superseded by the control of the will. Further, the direction of the movement is given by the sense of sight, which so guides the motions of our legs that we do not jostle our fellow passengers, or run up against lamp-posts; and the same sense directs also their general course along the line that *habit* has rendered most familiar, although at the commencement of our walk we may have intended to take some other." It seems to me that a man who walks along a crowded street must always exercise a certain amount of attention; if he is accustomed to do so like a thoroughbred citizen, he can thread his way with much less attention than a man used to walk along quiet country roads, and consequently he is able to divert his thoughts to other subjects as he goes along, to converse with a friend, or to meditate over some difficult problem; but if the attention to the problem be too profound, the minimum of attention necessary to guide the footsteps is withdrawn, so that he will go on in a straight line without turning round the proper corner, or if the distraction be further increased, he will strike against the passers by, or perhaps stand still till his attention is again directed to the necessity of attending to his steps. We can understand how a man might perform some simple motion such as flexing or extending his legs by reflex or automatic action; but that he should walk from one part of a crowded

city to another without any exertion of conscious intelligence seems altogether unproved and unproveable.

In what we call absence of mind, the attention is so concentrated upon a single subject, or train of thought, that one loses the sense of his present situation which accompanies less intense mental action. Consciousness runs only in one channel, and we wake up as it were from a dream, when the concentration is relaxed. The amount of concentration of mind determines the amount and complexity of the physical actions which can be at the same time carried on. The concentration may be so great that the individual can execute no motion whatever; he is wrapped in a reverie, like Socrates, who stood for a whole day and night in the camp before Potidæa motionless, with his attention completely engrossed with some subject of meditation. In a lesser degree of mental attention the walk becomes slower, or more awkward than usual, or there may be even a double action of the mind; a train of thought is diligently pursued, while the motions are regulated by a loose association of ideas. Thus, there is a story told of a learned clergyman, very much given to absence of mind, who went up stairs to change his dress, previous to going out to dinner. After a while, his wife went up to see what had become of him, and found that he had taken off all his clothes, and gone to bed. In this case there were obviously two trains of thought going on in the mind; one the subject of learned contemplation, and the other the association of ideas which connected the taking off his upper garments with that of going to bed.

Dr. Carpenter talks of a man walking by reflex action "being sustained by the successive contacts of our feet with the ground, each exciting the next action;" but it is clear that, without the picture of the street or road present to the conscious mind, walking to any purpose cannot go on, the mere absence of light being sufficient to put an end to it, save in the case of blind persons, who, however, do not walk by reflex action, but depend upon the increased activity and exercise of their other senses. It is difficult to perceive what Dr. Carpenter means by the sense of light guiding the motion of our legs; for indeed sensation can be no guide. It transmits information to the mind, which makes use of it for our guidance, and if the functions of the hemispheres were suspended, and no information transmitted to the mind as to the state of the external world, the process of walking would soon cease, though all true reflex action might continue.

Here it may be noticed that the advocates of unconscious cerebration seem to ground a great many of their arguments upon the assumption that the mind can only attend to one subject at once, and if this be doubted, many of their arguments must appear inconclusive. It is generally admitted by metaphysicians, however, that the mind can attend to more than a single object at once. Sir William Hamilton's opinion, which ought to be acceptable to Dr. Carpenter,\* is thus given : " You will recollect that I formerly stated that the greater the number of objects among which the attention of the mind is distributed, the feebler and less distinct will be its cognisance of each—*Pluribus intentus, minor est ad singula sensus.*"

" Consciousness will thus be at its maximum of intensity when attention is concentrated on a single object ; and the question comes to be, how many several objects can the mind simultaneously survey, not with vivacity, but without absolute confusion. I find this problem stated, and differently answered by different philosophers, and apparently without a knowledge of each other. By Charles Bonnet the mind is allowed to have a distinct notion of six objects at once ; by Abraham Tucker the number is limited to four ; while Destutt Tracy again amplifies it to six. The opinion of the first and last of these philosophers appears to me correct."

A man can attend to two simultaneous processes all the more easily if they are different in kind ; for example, one can direct a bodily action with a purely intellectual operation more readily than he can attend to two intellectual operations. The human mind requires less attention to intellectual or muscular operations to which it is accustomed, than to those which are new, and therefore difficult, and as the effort is much smaller, the amount of attention or directed consciousness is much less ; but to attempt to transmute this diminution of attention into a proof that no attention whatever is required, seems to me precisely the fallacy which underlies the whole of Dr. Carpenter's argument. We know that when a thing is once done it is easier done over again ; the oftener we do it the easier ; and this is true both of purely mental and of voluntary muscular operations. The easier a thing is done the more ready is the mind to forget the efforts it has made to do it ; and again, great rapidity of conscious impressions is accompanied with a very faint memory of these impressions ; and thoughts and volition resulting in actions

\* See Sir William Hamilton's "Lectures on Metaphysics," Lecture XIV., vol. i., p. 254.

are much less readily remembered than thoughts ending in speech. To such an extent indeed is this true, that some people have actually argued that we cannot think without words. But take for example a man fencing with another. He watches his opponent's point, and his opponent's eye, and executes a series of most complicated and rapid movements of parry and thrust every instant in a different order. He interprets his opponent's thrusts or feints, parries them, and then makes lunges and feints himself. All this requires quick apprehension and thought, yet it is not translated into words. The fencer is conscious, though he is not conscious of being conscious; that is, he has no time for introspection or retrospection, and although he would be conscious of each pass, if he only made one, or stopped, or rested his consciousness on the last one which he made, he is totally unable to recall the series of motions which he has gone through; and nothing remains in his memory but one or two of the most striking incidents in the fencing, such as that he has hit his opponent several times, or has been hit himself.

The large field of wordless thought is a subject well worthy of consideration. Not only are there thoughts which die away without being translated into words, there are also thoughts which we habitually confound with sensations,\* and thoughts which pass into motions without ever being expressed by symbols. These are extremely numerous, especially in the fields of technical art and action; but to follow up the subject at present would lead us into a digression. It is one of our besetting mental fallacies not only to imagine that thoughts are inseparable from words, but that where there are no words, there are also no thoughts. One thing is certain, that words add much to the clearness of our conceptions.

\* Those who have not already studied the question will find examples of the play of comparison, association, ideal anticipation, judgment and inference in the use of the senses, in the "Westminster Review" for July, 1872, in an article entitled, "Recent Experiments with the Senses," and in the works there quoted, especially "Helmholtz's Handbuch der Physiologischen Optik." It requires a careful study of optics to learn how much of the mental action enters into our vision of the phenomenal world. As the Reviewer remarks, "If a part of an impression, however elementary it may seem, is sometimes overcome and changed into its opposite, by a mere element of inference or effect of experience, it is clear that it is not the pure result of the nervous stimulation, but depends, in part at least, on further and cerebral processes. In this way, for example, we know that a person's recognition of a colour is in part an act of inference. The science of optics is full of the most startling illustrations of the displacement of inferences, so rapid and mechanical that they easily appear intuitions to persons ignorant of these facts."

“Thought, too, delivered is the more possessed ;  
Teaching, we learn, and giving we retain  
The births of intellect, when dumb forgot.”—YOUNG.

Thoughts unclothed in words are much less easily made the subjects of introspection and analysis, and fade very rapidly from the memory. The domain of wordless thought is the dim side of our consciousness. In a man's mind, as well as in the outer world, there are processes and objects which he is in the habit of passing over without any attention or analysis, and this habit becomes strengthened the older he gets. A careful introspection of his own wordless thoughts will convince one how numerous they are, and how little he has studied their nature.

In the Eighteenth Lecture on Metaphysics Sir William distinguishes three degrees of mental latency. The first is defined in the statement that what we know or recollect is not present to our consciousness unless it be recalled at will or start up in a train of association ; this every one admits. The second degree exists when the mind contains certain systems of knowledge, or certain habits of action, which it is wholly unconscious of possessing in its ordinary state, but which are revealed to consciousness in certain extraordinary exaltations of its powers. This I have no intention of disputing, though I should like rigidly to examine the evidence of some of the illustrations of it, which are copied from one book to another. His third degree seems more capable of dispute. “You are,” he says, “of course, aware, in general, that vision is the result of the rays of light, reflected from the surface of objects to the eye ; a greater number of rays is reflected from a larger surface ; if the superficial extent of an object, and, consequently, the number of the rays which it reflects, be diminished beyond a certain limit, the object becomes invisible ; and the minimum visibile is the smallest expanse which can be seen—which can consciously affect us—which we can be conscious of seeing. This being understood, it is plain that if we divide this minimum visibile into parts, neither half can, by itself, be an object of vision, or visual consciousness. They are, severally and apart, to consciousness as zero. But it is evident that each half must, by itself, have produced in us a certain modification, real though unperceived ; for as the perceived whole is nothing but the union of the unperceived halves, so the perception—the perceived affection itself of which we are conscious—is only the sum of two modifications, each of which severally eludes our

consciousness. When we look at a distant forest we perceive a certain expanse of green. Of this, as an affection of our organism, we are clearly and distinctly conscious. Now, the expanse of which we are conscious is evidently made up of parts of which we are not conscious. No leaf, perhaps no tree, may be separately visible. But the greenness of the forest is made up of the greenness of the leaves, that is, the total impression of which we are conscious is made up of an infinitude of small impressions of which we are not conscious." Hamilton goes on to illustrate his thesis by arguing in a similar manner on hearing and other senses; but this line of reasoning, like many others based on the infinite divisibility of extended objects, is more puzzling than convincing. It does not, in any case, seem to help much the theory of latent ideas. No doubt a thing perceived may be divided into a half, and this half may be too small to be perceived, but there is no such thing as half a perception. Two points singly invisible may by joining together produce a perception; but because the two do so is no proof that one of them modifies insensibly the perceptive faculty, and unless we assume this, the argument stops short of its destined aim, for it is not sufficient to prove that the impression modifies the optical apparatus. An impression which should modify the optic nerve without exciting visual perception is not analogous to latent thought, which, according to Sir William Hamilton, is proved to exist from its effects, but the *minimum visibile* is not perceptible from its effects, and is only discoverable by reasoning on the infinite divisibility of matter. This argument would go to prove that any point, say the million billionth part of a grain of sand, must modify the perceptive faculty because a million billions of such parts collected together can be seen, and our perception is but the sum of these million billion parts. An impression which can never be perceived till combined with others, or, perhaps, with a billion of others, is no perception at all. When an adequate force moves a stone, it does not follow that half the force must have an insensible effect upon it. We know that it has none, at least, in the way of moving it, being counterbalanced by other forces; and it is possible that the changes of our sensory organs whereby we recognise outward objects actually do consist of motions, or modifications of arrangement and position in nerve tissues.

"In like manner," says Sir W. Hamilton, "in the internal perception of a series of mental operations, a certain time,

a certain duration, is necessary for the smallest section of continuous energy to which consciousness is competent. Some minimum of time must be admitted as the condition of consciousness; and, as time is divisible *ad infinitum*, whatever minimum be taken, there must be admitted to be, beyond the cognisance of consciousness, intervals of time, in which, if mental agencies be performed, these will be latent to consciousness. If we suppose that the minimum of time to which consciousness can descend be an interval called six, and that six different movements be performed in this interval, these, it is evident, will appear to consciousness as a simple indivisible point of modified time, precisely as the *minimum visibile* appears as an indivisible point of modified space. And, as in the extended parts of the *minimum visibile* each must determine a certain modification on the percipient subject, seeing that the effect of the whole is only the conjoined effect of its parts; in like manner, the protended parts of each conscious instant—of each distinguishable minimum of time—though themselves beyond the ken of consciousness, must contribute to give the character to the whole mental state, which that instant, that minimum, comprises. This being understood, it is easy to see how we lose the consciousness of the several acts, in the rapid succession of many of our habits and dexterities. At first, and before the habit is acquired, every act is slow, and we are conscious of the effort of deliberation, choice, and volition; by degrees the mind proceeds with less vacillation and uncertainty; at length the acts become secure and precise: in proportion as this takes place, the velocity of the procedure is increased; and as this acceleration rises, the individual acts become secure and precise: in proportion as this takes place, the velocity of the procedure is increased, and as this acceleration rises, the individual acts drop one by one from consciousness, as we lose the leaves in retiring further and further from the tree; and, at last, we are only aware of the general state which results from these unconscious operations, as we can, at last, only perceive the greenness which results from the unperceived leaves.”

The relation of objects of sense to space, and of thoughts to time, so beautifully expressed by Sir William Hamilton, forms a pleasing antithesis till we remember that sensory impressions, as well as thoughts, have a certain relation to time; for example, a coloured object rapidly flashed before the eye does not produce a distinct impression. The fallacy of

the argument seems to me to be in supposing that the attribute of consciousness is not infinitely divisible, along with the thought which it accompanies. The protended parts of each *conscious* instant must be divided into an infinity of *unconscious* parts. Thus consciousness is not the concomitant of such mental operations as go on very rapidly, but stands to these operations in the same relation as the eye does to minute objects. Surely this is something very like the raising of consciousness into a separate faculty. In any case, this philosopher assumes that consciousness is of slower operation than muscular contractions. The discs of a muscle can contract many times ere consciousness derives a distinct impression from their contractions. This may be fairly disputed. The quickness of thought is as great as that of muscular motion. Music is often given as an instance of work done under the influence of unconscious cerebration, and yet it may be held that the mind perceives the execution of a tune as quickly as the muscles can play it. I have heard it said that the conductor of an orchestra can detect a false note, from a particular instrument, amongst the great variety of sounds in a brass band. Altogether Sir W. Hamilton's argument appears to me of the same character as that of the Eleatic Zeno upon motion, but not so successfully conducted.

What is perhaps the best of Sir William Hamilton's arguments is taken from an assumed violation of what he calls the law of association. One idea suggests another; and the second idea usually suggests a third; but sometimes this series is broken up: usually A suggests B; and B, C, but sometimes A suggests C alone. In that case, observes Sir William, B was unconsciously present to the mind; A in reality did not bring C to consciousness; it was the B of which the mind was not conscious that did so. If you do not assume this, the "laws of association" are violated. An opponent might, however, make a stand on the matter of fact, and reply, "You say that A can only suggest B, and B, C, but I give you an instance where A can suggest C." If this instance be deceptive, why may not every other be so? And to make a finer point. How do you know that A suggests B? Perhaps it suggests something else which suggests B. At any rate here are two laws; in the first case one conscious idea is associated with a second to call into consciousness a third; in the second we have two conscious ideas apparently associated and in precisely the same

way, and yet you insist in putting in between them something entirely different, unless you hold that not being an object of consciousness makes no difference.

As for the laws of association, as they are called, it would be agreeable to know what they are. It cannot be affirmed that one idea naturally and invariably suggests another; in any case the exceptions are very numerous; indeed the obliteration of links of association is one of the most common of the educational processes through which we pass. For example, we have learned to speak by a slow process of associating our conceptions with certain recognised symbols; between these symbols and the conceptions themselves there were a number of associated ideas taken up in the process of instruction long ago faded from our memory, but which we know must have existed and did exist. At last the word is so closely associated with the thing, and the thing with the word, that it is only by a careful process of thought that we know that the idea actually exists without the word. By using these associated symbols I may learn a set of other ones, that is a new language, and though at first I may be obliged to go over the words of my own language, and translate them into another, in the end I can so familiarise myself with a foreign one as to drop the old words, that is, the old links of association, and think in a new language. Moreover, the laws or train of associations are so variable that we do not hold ourselves compelled to explain its anomalies. Of all mental processes association appears to us the most inexplicable. With this proviso it may be held that the explanation that an intervening link of association is momentarily present to the mind and then forgotten, does not seem to us so unreasonable. Is this kind of forgetfulness not the most common of all things? A thousand ideas and representations rise into the mind, present themselves to consciousness, and unless the mind pay special attention to them, for some special reason or other, they disappear from memory without leaving any trace behind, and sometimes they do so, if not instantly, at least within a very short period of time. Were it not for this forgetfulness, one could recall every occurrence of his past life day by day. It is true, circumstances which we imagine we have forgotten sometimes again rise in the memory, but this does not gainsay the general truth that many things, both mental and bodily, of which we were once conscious, are to all appearance totally forgotten, and it is precisely those operations

which we are most ready to forget, on which the theory of unconscious cerebration seems to rest. Why then should it appear so incredible that the memory of the consciousness should cease in a very short time, especially when the impression was not vivid, consciousness faint, and the sequence of ideas rapid or distracted?

It may not be out of place here to notice that Sir William Hamilton held the view that consciousness was maintained even during sleep. He believed sleep to be a series of isolated acts of consciousness, which, unless under some unusual circumstances, we forget on awaking. This makes it all the more strange that he should favour a hypothesis by which waking thoughts are stripped of the accompaniments of consciousness, rather than admit that consciousness could be separated from memory.

Sometimes we forget one part of an action or mental process, and sometimes another, and this partial oblivion has been the source of illusions. A man may have learned something, and retaining what he has learned, may forget when and where he has learned it, so that his knowledge, being revived in his mind by some sudden association, he is doubtful whether it is not a new creation of the mind or an effort of the imagination, so easily and rapidly comes the evolution of his stored up knowledge. Dr. Laycock, in his interesting "Chapter on some Organic Laws of Memory" in the "Journal of Mental Science,"\* has given some instances where authors had forgotten what they had themselves written, and read their own productions with great pleasure; and no doubt an author is extremely well adapted to admire his own works, for no one else could be expected to occupy so exactly the same standpoint.

It happens to all of us that on finding ourselves in a certain situation, or on viewing a landscape or some other scene for the first time, we have a vivid impression that we have been in the same position or witnessed the same scene before; and it is very likely that we have seen something closely similar, or have read or dreamed of something like what we are going through, and that we recognise the resemblance without remembering when, where, or how we have seen the thing similar, and thus are led into the belief that we have seen something the same. Occasionally by rigid mental scrutiny, we are enabled to recall the circumstances under which the previous occurrence had taken place, and

\* July, 1875.

thus as it were lay bare the machinery of the illusion which was used by the Pythagoreans as an argument for the transmigration of souls.

The following are instances of ideas presented to consciousness, and very quickly forgotten. Sometimes the will is exerted to apprehend impressions from the senses and secure the result; for example, if a clock were to strike three or four, we might suddenly call our mind to note the number of sounds so as to learn what o'clock it was; and we have the impression on our mind that we must do so quickly, or else all consciousness of the number of strokes will pass away, and we shall remember nothing.

The usual address of one of my friends on meeting me was: "Oh, what was I going to say?" At one time or another we have a remark or train of remarks as it were trembling on our lips, when in an instant it is forgotten, sometimes to be recalled in a minute, sometimes not again to return to memory.

Again I have noticed that when I look up a foreign word in a dictionary with my attention wandering on something else, I return to the text which I was reading without either knowing the meaning of the word or being sure that I have looked it up, but on again looking it up, I at once recognise the different meanings given in the dictionary, and feel sure that they were in my mind a few seconds before. Observations such as these, which are, I suppose, common to us all, ought to make one cautious against being positive that we must remember what we were conscious of the minute before.

Moreover, the condition of somnambulism affords proof that memory can be separated from consciousness, for somnambulism, as Sir William Hamilton has himself stated, has consciousness without memory for its characteristic. This being so, it is very strange that some should have represented the analogous state of mesmerism as an instance of unconscious cerebration. A man acting in a mesmeric state is conscious of what he does, but unconscious of the antecedent and surrounding circumstances in which he is placed.\* The will is suspended, and the thoughts of the

\* Dr. Laycock in his learned work "Mind and Brain," Edinburgh, 1860, vol. ii., p. 101, gives an explanation of those processes which I am ready to accept, save that the words "thought ceases" might convey an erroneous impression. "The best illustrations," writes Dr. Laycock, "of this kind are afforded by the phenomena of sleep and somnambulism, and by those manifested under the influence of alcohol, opium, chloroform, hachisch, and other nervine irritants and anæsthetics. During the waking conscious state, all the external senses instinctively co-operate in verification without the knowledge of the in-

mesmerised person follow a train of association which may be guided by another, but he is conscious of this train of association, and his attention is indeed very strongly directed towards certain objects to the exclusion of others; and what is attention but concentrated consciousness?

The mesmeric state is somewhat akin to reverie and still more so to somnambulism. In the "Chicago Journal,\* of Nervous and Mental Disease," there is a translation of a paper by Dr. E. Mesnet, on "The Automatism of Memory and Association in Pathological Somnambulism." It contains a remarkable series of observations on a soldier wounded in the head in one of the battles preceding Sedan. After recovering from paralysis of the right half of the body which continued for a year, this man occasionally fell into states of somnambulism. The observations of Dr. Mesnet are of great interest, though his conclusions are sometimes questionable. It is likely that some may regard this case as a living example of unconscious cerebration.

"The transition from health to illness," we are told, "is accomplished with rapidity, in a few minutes insensibility, without convulsions, without cry, *he changes from one to the other without experiencing those fading tints of light and reason which we find at the hour when sleep approaches, and he who is conscious, responsible, and in full control of himself, an instant later is only a blind mechanism, an automaton, obeying the unconscious activity of his brain.* He moves with an appearance of freedom which he does not really possess; he seems to exercise his will, and yet he has only an unconscious volition which is powerless to remove the slightest obstacle opposed to his movements."

Dr. Mesnet found that while, in this condition, the general sensibility was extinguished; hearing, smell, and taste were sealed against any impressions from without, and sight yielded

dividual, and so place him in fitting relation with the external world. When they cease to transmit impressions unitedly, from changes in the co-ordinating sensory ganglia, unconsciousness begins to approach; and when the senses are at last shut up, so that no affinitive impressions reach the ideagenic tissue, sensation, perception, and thought cease, and all verification ends. If, however, the impressions reach the tissue, and are not co-ordinated, then false thoughts will arise; for while there is no correct knowledge of the external world, the impressions themselves excite ideagenic changes. These result either in somnambulistic or delirious acts and thoughts. Chloroform sometimes developes this state of somnambulistic activity, and the world of dreaming becomes a world of reality to the individual."

\* January, 1875. Translated from "L'Union Médicale," July 21 and 23, 1874, by F. G. Huse, M.D.

only vague ideas ; while the sense of touch persisted, and and seemed to acquire delicacy and an exaggerated impressibility. The muscular sensibility, if it be distinguished from touch, seemed also to be preserved. In walking about and acting during these states, the man only used the sense of touch as a connection with the outer world ; but then a man who feels touch is conscious. Feeling is merely a phase of consciousness. By means of this sense observers were enabled to suggest trains of association in his mind, to arouse ideas which were the beginning of hallucinations under which he acted ; but then these associations, these hallucinations, implied consciousness, though a consciousness limited to one sense, to a train of associations apparently not under the control of the will, and to certain pictures floating before the mind. Any one who reads the very interesting description of this man's state will be forced to admit that there is no proof, and indeed proof to the contrary, that the man was unconscious.

As is usual in such cases, the man entirely forgot, on returning into his normal state, what he had done during his somnambulism. The demonstration of this condition of double consciousness is perhaps the most interesting and valuable addition to our knowledge of mental operations afforded to us by the observations of physicians. Not only is it interesting in itself, by enlarging our conception of the human mind, but it is very serviceable in helping us to refute arguments and hypotheses which ignore observations so unexpected in their results.

One might receive what Leibnitz and Sir W. Hamilton have written about latent thought without admitting the extensions which Dr. Carpenter has given to the theory. It is somewhat difficult to make out what that learned physiologist really holds, for it is possible he may not entirely agree with the quotations which he makes from various authors, who certainly do not agree with each other ; but it would seem that Dr. Carpenter's own view amounts to this—That there is a principle or order which sometimes arranges our ideas in a more regular or orderly posture than we could have placed them with all our skill and industry ; all the while we are not conscious of this process, but may be thinking of something else. In short two processes of thought may go on, if not within the mind, at least within the cerebrum ; and of one of these processes we are conscious, and of the other not conscious, so that when one asserts that he

is not thinking of a thing, he may be quite mistaken. When a man is composing a poem or story, or classifying objects in zoology, or working out a problem in algebra, he may think it or he may cerebrate it; he may work it out in his waking moments with toil and care, or he may cerebrate it in his sleep, and find the difficulty solved in the morning.

Dr. Carpenter, however, believes that unconscious cerebration is really due to unrecognised changes in the substance of the brain; thus he hesitates to call them mental changes at all. Here, as Sir Henry Holland has remarked, this hypothesis "supposes intellectual operations in which consciousness has no part, but which, nevertheless, evolves true logical results. Here we are called on to recognise an *exclusion* of mind from the highest functions of mind." Dr. Carpenter's view is the same as that which Sir William Hamilton calls the mechanical theory—that the whole process is effected without either volition or even any action of the thinking principle, it being merely automatic or mechanical. "This opinion," he continues, "is unphilosophical, because, in the first place, it assumes an occult and incomprehensible principle, to enable us to comprehend the effect. In the second place, admitting the agency of the mind in accomplishing the series of movements before the habit or dexterity is formed, it afterwards takes it out of the hands of the mind, in order to bestow it upon another agent. This hypothesis thus violates the two great laws of philosophising—to assume no occult principle without necessity—to assume no second principle without necessity."\*

Rather than admit Dr. Carpenter's explanation thus repudiated by one whom he claims as an ally, we might be tempted to take up the old theory of inspiration, of new ideas being put into the mind by another spirit in some unknown way. I already admit the existence of other minds besides my own, and I am more disposed to believe that they might communicate their thoughts to me than that my mind could be unconsciously composing poetry while I imagine myself studying science.†

\* Sir William Hamilton's *Lectures on Metaphysics*, Vol. i., page 368.

† Dr. Carpenter gives in another place what might be a third solution of the question: of which, however, I have no intention of availing myself: "Looking at nerve force," he says, "as a special form of physical energy, it may be deemed not altogether incredible that it should exert itself from a distance, so as to bring the brain of one person into direct dynamical communication with that of another, without the intermediation either of verbal language or of movements of expression. A large amount of evidence, sifted with the utmost care, would be needed to establish even a *probability* of such communication, but would any man of science have a right to say that it is *impossible*?"

It is quite true that after long puzzling ourselves to see the true relations of things, it now and then happens that they suddenly, as it were, present themselves to our mind, and the difficulty is at once solved like a whole landscape seen by a flash of lightning; but this affords no proof that we have been working at it unconsciously, it merely shows that the mind is sometimes more rapid and powerful in its operations than at others. Occasionally, as in recollecting where we put lost objects, it is owing to an idea crossing our mind which lights up a lost train of associations. As well might the wearied marksman, whose shoulder is sore, and whose gun trembles in his hand so that he shoots wide of the mark, but who finds next morning that he can hit the centre—as well might he conclude that he had been unconsciously practising in his sleep. He, too, has his flashes of inspiration; on a certain moment he feels that the muscular adjustment and visual adaptation are complete, and that he has made a correct aim. This he may repeat once or twice, or he may totally fail to do it again for days afterwards, but, like the poet or mathematician, he has times when the results are happier. Our views are confirmed by considering attentively the nature of these sudden flashes of inspiration; they show us the true relation of things by which we can work out problems and gain results; but they do not give us the *results* themselves.

To take an easy example; we do not see how to state a question in arithmetic correctly, and after puzzling our brains for a while we give it up; suddenly our thoughts return and we see at once how to state it. But in the instances usually given we have to work out the question, we never awake with the answer. Even suppose we did so it would not be conclusively proved that we had worked it out unconsciously; we might have done it like the gentleman mentioned by Dr. Carpenter, who worked out an algebraic sum which had long puzzled him, obtained the desired result and wrote it down, but forgot all about it until he found the scrap of paper upon which he had worked it.

These flashes of inspiration do not necessarily occur after a given interval of time during which unconscious cerebration is assumed to have been at work. They may occur in the course of one sustained effort of thought, the whole relation of things becoming suddenly clear; or they may occur in the heat of an improvised debate. In truth the manner of their occurrence determines in a great degree the intellectual character and capacity for various pursuits.

Thus the orator and the improvisatore seize upon the relations of a subject quicker than the ordinary writer of poetry or leading articles. There are two ways of writing a book as Dr. Johnson remarked: to wait for the inspiration, or to sit down doggedly to it. I always suspected that the first method of working was rather a proof of mental weakness than of mental power, and that the great masters of thought or imagination could work on rapidly, easily, and with fewer checks than those who had to wait for ideas, who easily got tired of a difficult subject, and had to put it away till the mind was refreshed. I have no intention of going through all Dr. Carpenter's instances and anecdotes; but I doubt not all those that are authentic could be explained in an easy manner without leaving room for his principle of unconscious cerebration.

The difference between ourselves and our opponents, however, is not solely a difference in explanation. They are in the habit of stating facts in a way which is only consistent with their theory; for example, Sir William Hamilton says: "Now, all of you must have experienced, if ever under the necessity of reading aloud, that, if the matter be uninteresting, your thoughts, while you are going on in the performance of your task, are wholly abstracted from the book and its subject, and you are perhaps deeply occupied in a train of serious meditation. Here the process of reading is performed without interruption, and with the most punctual accuracy; and, at the same time, the process of meditation is carried on without distraction or fatigue." Now, so far from a person being able to read a book aloud and think on something else without distraction and fatigue, I believe when this is done that it is really accompanied both by distraction and fatigue, that no train of severe and difficult thought can be carried on in this way, and that, though the mind may wander through a series of associations, yet a minimum of attention must always be kept up to the reading. The mind is still conscious of the printed page, and if the words were ill spelt or a word were to be repeated twice or thrice, or any very startling expression used, the diminished attention would at once be increased; and how could this be if no consciousness had remained? The easier the reading the more conscious are we of the ideas; the more difficult the reading the fainter becomes the grasp of the ideas, so that we are occasionally obliged (as in deciphering a difficult MS.) to read a sentence twice over, once for the words, and once for the

sense. In reading aloud with the mind wandering on something else, we only read for the words; each word is recognised but not their collective meaning. As has been already said, much of the difficulty has been created by the assumption that we cannot attend to more than one mental process at the same time.

There is a great similarity between physical processes which are readily forgotten and mental ones, so that if we affirm unconscious cerebration of the one we are obliged in consistency to do so of the other. In this way Dr. Carpenter, who is much less wary than Sir William Hamilton, carries his views so far as to render the whole theory suspicious.

Perhaps he nowhere exposes the weakness of his position more than in the following statement.\* “So an expert calculator, who may have originally had no more than an ordinary facility in apprehending the relations of numbers, casting his eye rapidly from the bottom to the top of a column of figures, will name the total without any conscious appreciation of the value of each individual figure; having acquired by practice somewhat of that *immediate insight*, which is so remarkable a form of intuition in certain rare cases. It is certain that a distinct ideational state must have been *originally* called up by the sight of each individual figure; and yet an impression made by it upon the cerebrum, which does not produce any *conscious* recognition of its numerical value, comes to be adequate for the evolution of the result.” It certainly is a bold statement to say that a man can add up a column of figures without the mind being conscious of any of them. Common sense would surely reply, that if the accountant were unconscious of even one of the figures, he would not add it up along with the rest, and his addition would thus be incorrect. It is true an accountant in adding up a long column of figures has his attention so occupied with the sum which is growing in his mind that at the end of the process he has totally forgotten the separate ciphers which make up the addition, but this forgetfulness is no proof that a momentary consciousness did not exist—if he were stopped for a moment and asked what was the last figure, he would probably answer correctly, unless the cohesion of his ideas were scattered by the abruptness of the question. The truth is, if one were to add up a long column of figures and dwell for a short while on each of them so as to ensure that he was fully conscious of their

\* Op. Cit., p. 529.

numerical value, and if after he had completed the addition and written it down, he were asked to repeat the column of figures, the mind of the man, after adding the columns thus slowly, would be in very much the same condition as if he had added them quickly; he would be totally unable to recall the column of figures in both cases. But Dr. Carpenter would say, that in the one case the accountant could not repeat the column of figures because he had forgotten them, and that he did not know the other column of figures because he had been unconscious of their numerical value, and that, though it was a reasonable explanation to say that the column which he had added slowly had faded from his memory, it was incredible that the one he added quickly should have done so. A similar argument has been happily stated by Dugald Stewart.\* “Thus, in the case of a performer on the harpsichord, I apprehend that there is an act of the will preceding every motion of every finger, although he may not be able to recollect these volitions afterwards, and although he may, during the time of his performance, be employed in carrying on a separate train of thought. For it must be remarked, that the most rapid performer can, when he pleases, play so slowly as to be able to attend to, and to recollect, every separate act of his will in the various movements of his fingers; and he can gradually accelerate the rate of his execution till he is unable to recollect these acts. Now, in this instance, one of two suppositions must be made. The one is, that the operations in the two cases are carried on precisely in the same manner, and differ only in the degree of rapidity; and that when this rapidity exceeds a certain rate, the acts of the will are too momentary to leave any impression on the memory. The other is, that when the rapidity exceeds a certain rate, the operation is taken entirely out of our hands, and is carried on by some unknown power, of the nature of which we are as ignorant as of the cause of the circulation of the blood, or of the motion of the intestines. The last supposition seems to me to be somewhat similar to that of a man who should maintain that, although a body, projected with a moderate velocity, is seen to pass through all the intermediate spaces in moving from one place to another, yet we are not entitled to conclude that this happens when the body moves so quickly as to become invisible to the eye. The former supposition is supported by the analogy of many other

\* Sir William Hamilton’s “Lectures on Metaphysics,” vol. i., p. 357.

facts in our constitution. Of some of these I have already taken notice, and it would be easy to add to the number. An expert accountant, for example, can sum up almost with a glance of his eye a long column of figures. He can tell the sum with unerring certainty, while at the same time he is unable to recollect anyone of the figures of which that sum is composed; and yet nobody doubts that each of these figures has passed through his mind, or supposes that, when the rapidity of the process becomes so great that he is unable to recollect the various steps of it, he obtains the result by a sort of inspiration."

Dugald Stewart, evidently, had no foreboding of the existence of Dr. Carpenter; but it is not clear how the consciousness of the accountant could be granted, and the theory of unconscious cerebration be still used to explain operations which are generally assigned to it.

Dr. Carpenter's work has been selected for criticism, as he is the most popularly known advocate of the theory, and, though it would take too much room to go over all his illustrations, those selected are believed to be the strongest supports of his position. Anyone who reads his book will perceive that he is somewhat ready to admit the truth of an anecdote when it favours his own views, and the following may serve as an instance. "It is a remarkable confirmation of this view," he observes, "that ideas which have passed out of the conscious memory sometimes express themselves in *voluntary muscular movements*, to the great surprise of the individuals exercising them." So far from thinking this statement a confirmation of any view, most people will think that it requires itself to be confirmed, and their mistrust will, perhaps, not be lessened when they find that Dr. Carpenter has to appeal to the spirit-rappers for assistance. "True answers," he writes, "are often given to questions as to matters of fact, notwithstanding that there may be either entire ignorance, proceeding from complete forgetfulness of those facts, or absolute disbelief in the statement of them." Thus, a man may unconsciously know what he consciously disbelieves, and record his knowledge by kicking on the table. Dr. Carpenter gives some instances of this from the Rev. Mr. Dibdin's lecture on table turning, in which the number of years the Queen had reigned, and the age of the Prince of Wales, were indicated by taps on the table, though no one present knew the number of years in either case. The number of tailors sewing in a neighbouring room was given by

three taps and two gentle rises, the taps being for three full-grown tailors, and the rises for two boys. This is a famous way of disposing of the spiritualists. It is in vain that they will insist that they learn from spirits things that they did not know before. Dr. Carpenter will show them that they have a fund of unconscious knowledge which they never dreamt of, and which they display in a manner they never intended. But, seriously, we cannot think that Dr. Carpenter's explanation will be received as sufficient to account for the facts stated by spiritualists, if these facts be admitted at all.

The Rev. W. G. Davies, in a thoughtful paper upon "Consciousness and Unconscious Cerebration,"\* has the following passage:—

"When we are at a loss for a name and make every effort to recall it, but unsuccessfully, and that name afterwards spontaneously flashes into consciousness, such an event can be satisfactorily accounted for by the great physiological law of production to which reference has been already made. The disintegrating activity involved in hunting for the name has made an increased demand upon the nutritive process or production, extra force has been generated, this flashes out of latency into consciousness, and lo! the missing name. If 'Unconscious Cerebration,' in the sense of expenditure, is made to account for the fact that the schoolboy who can just manage with great effort to repeat fifty lines of Virgil before retiring to rest, can repeat them fluently in the morning, we are placed in this difficulty, namely, how to make a cask from which the water runs out as fast as it runs in, fuller in the morning than it was the previous night. So intelligent a man and so able a physiologist as Dr. Carpenter must see the reasonableness of what we are here urging if he has not done so already, only he is so hampered by an untenable hypothesis that he does not clearly state whether by 'Unconscious Cerebration' he does not mean both integrating and disintegrating mental processes. Let him, therefore, ponder well over the fact that the integrating process is invariably preparatory to the display of consciousness, that the disintegrating process never takes place without such display."

For my part, I am neither satisfied with this explanation of the reverend gentleman, nor able to suggest another one. There are anomalies in memory and association which

\* "Journal of Mental Science," July, 1873.

will possibly always remain mysterious. The condition which is required to allow for the play of Mr. Davies' explanation is, that there should be an increased amount of brain work in the effort to recall the lost name; but, then, the name may be recalled, or return, to the mind without any such effort being made; at least, the effort may be only momentary. A man may not think it worth his while to take any trouble to recall the lost name, and yet it may appear to consciousness the minute after, five minutes after, a week after; and this without any search demanding or allowing the nutritive processes which generate extra force.

The recovery of lost names can be explained to a certain extent by the mental process of association, but not by "the integrating and disintegrating mental processes." It may be that a schoolboy who can say his lesson more readily in the morning than on the evening before is aided by the fresher state of his brain; but we do not see that "the fact" upon which Dr. Carpenter is asked to ponder well, has been established on scientific evidence. How do we know, for example, that "the disintegrating process" never takes place without a display of consciousness? Is there never any disintegration of the tissues of the brain without consciousness? Or may not consciousness accompany the integration of the tissues? We can infer, from certain changes and reactions in the blood, that mental exertion is followed by waste of the tissues of the brain, and that this waste is proportioned to the amount of work, but what are the order and succession of changes which go on in the nerve cells, or nerve fibres, during thought is, as yet, unknown to us. When we can detect a desire with a chemical re-agent, and when we can see an abstract idea through the microscope, we shall, perhaps, have a true physiology of the mind.

In any case the theory of "Unconscious Cerebration" derives no support from physiology. It is a child of the old metaphysics, to be brought forward and repelled by the study and analysis of mental operations, cognisable by internal self-examination.

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*On Mental Strain and Overwork.* By FREDERICK MACCABE, Licentiate, King and Queen's College of Physicians, &c., Resident Physician, State Criminal Asylum, Dundrum; Late Medical Superintendent, Waterford County Asylum; Hon. Sec. for Ireland to the Medico-Psychological Association.

(A Paper prepared for the Meeting of the Medico-Psychological Association, 11th August, 1875.)

In that general process of evolution by which the human race, as well as the individual, is governed, each age appears to possess some distinguishing feature which stamps it with a special character. In all those branches of study and of speculation which, from the earliest dawn of mental cultivation, have engaged the attention of mankind—in theology, in history, in philosophy, in law, in science, and in medicine—the student, looking back upon the progressive achievements of his race, recognizes certain well-marked eras. These, although chronologically distinct, afford landmarks when reviewing the progress of the human intellect in its search after that perfect knowledge which stimulates, but ever eludes, the efforts of its votaries. To more than one period the student can point and say: These were days of deep theological disputes, and the schools of divinity attracted the best intellects of the age. Of another period he may say: Historical research was here predominant. Of another the remark would be true that, while it lasted, the different schools of philosophy divided the intellectual world. And again: Here was an age of great legists; at such a period constitutional and international law gradually acquired shape and recognition. At all periods, whether of intellectual progress or stagnation, the fascination of numbers has thrown its spell over some of the most gifted minds; and, in the exact science of mathematics, the student has enjoyed this singular advantage, that every theorem proved, every problem solved, has been a step gained once for all—alone among the sciences this, within its range, has been permitted to afford a convincing answer to the ever-perplexing question, “What is truth?” As physicians, we should be ungrateful if, in the most cursory retrospective glance, we omitted to notice those votaries of science, whose patient search for the realization of the alchemist's dream led to so many discoveries in chemistry, and laid the foundations of that modern science that

has numbered among its disciples some of the most brilliant intellects of recent years. The study of medicine has passed through various gradations according to the theories that were predominant; until, in recent years, the cultivation of our art has become so interwoven with scientific investigation, so allied with strict inductive reasoning, and so associated with other and collateral branches of study, that the student of medicine may now be said to embrace in his curriculum the whole scope of scientific teaching, as well as the purely professional practice of the healing art.

At certain periods the progress of these various branches of human study has been rapid, at others it has appeared to halt, and sometimes the current of inquiry would seem to have taken a retrograde course, through the readoption of old errors, or by returning to erroneous methods of research. There was one feature, however, that, until within very recent times, gave a distinctive character to the progress of the world's mental labour—distinctive, at least, as contrasted with the present age—and it is with this feature that I am alone concerned at present. It would appear that, whatever branches of learning may, at various bygone periods, have attracted the earnest study of the best cultivated and most active intellects of their day, the generality of students did not overtask themselves by excessive mental application in any field of intellectual labour, and beyond the very few who devoted themselves to divinity, law, and medicine, any form of mental labour was unknown to the great middle-class—that class of society which, with rare exceptions, has furnished the brain-workers of the human family. Indeed, in former times, the condition of society was such as to impose almost insuperable obstacles to the rapid interchange of thought. The celebrated schools of divinity, philosophy, and medicine, propagated their views mainly by oral teaching. A few renowned universities and wealthy monasteries possessed libraries, which they esteemed as their most envied treasures, and access to these precious volumes was permitted only under strict supervision. Years were wont to elapse before a daring thesis in divinity, a new system of pathology, a novel scientific hypothesis, or a great astronomical discovery, penetrated beyond the precincts of the learned body amongst which it first found utterance. International communication was beset with difficulties, travelling was slow and not unattended with danger. The diffusion of knowledge was as tardy as the pilgrim's progress through Europe, and may be

said to have travelled at a foot-pace, by bridle-paths from one seat of learning to another. Later on the pace was quickened, and equalled that of the stage coach; then came railways, with rapid intercommunication of theories and of facts; until, in our own days, the achievements of science and the progress of discovery are flashed with the rapidity of thought along the electric wire.

In order to appreciate the altered conditions introduced by modern society into those callings wherein men gain their living by brain-work, let us for a moment, ignoring those "good old times" (which, nevertheless, produced their intellectual giants), consider the changes that have taken place within our own day. Within the memory of living men the qualifying examinations in all the professions have increased immensely in comprehensiveness and stringency. In our own profession such examinations were formerly of a very moderate and practical character; no man of average capacity and common industry had cause to fear rejection, and the student "walked the hospitals" serenely conscious that in his own good time he would duly pass the Board of Examiners, and enter the public service, or go to India, or settle in practice, without further test of fitness than the production of his diploma. In the present day the preparation for the preliminary examination is of such a nature as would formerly have been considered to constitute a liberal education in itself. That initial test passed, the student is expected to explore a vast field of study, his table laden with the works of every contemporary European teacher of weight or reputation. Then follows the qualifying examination, and as an illustration of the somewhat extravagant requirements of such a test, I beg to refer to the first and second examinations for the degree of M.B. in the University of London. If the candidate is intended for the public service further intellectual and professional tests are imposed, some of them—as for the Indian Medical service—of a severely competitive character. I have drawn an example from our own profession, but the same spirit of competition has extended to almost all callings;—for that of the Law no examination was formerly required, the possession of an University degree is now almost an essential, and the gaining of honours, a recommendation, for the Bar. For the public service the most ordinary educational acquirements, aided by political influence, were formerly deemed sufficient. At the present day the Reports of the Civil Service Commissioners, containing specimens of

the papers set for competitive examinations, will afford an appalling idea of the amount of mental labour the candidates must have undergone before attaining the age of puberty, in order to qualify them to present themselves at the prescribed age. Indeed, looking at the nature and scope of many of these Civil Service Examinations it is difficult to resist the conclusion that to prepare for them the mental powers of the rising generation of boys must be subjected to an injurious strain from their childhood to the age of puberty, if they are intended for the "open competition" entrance into any but the lowest ranks of the public service. The whole system of primary and professional training appears within recent years to have undergone a change; downright mental labour is exacted from youngsters, their flagging efforts stimulated alike by parents and teachers, who feel that, if their boys are to succeed under competition, the indulgent traditions of our public schools are out of date, and that, instead of permitting the energies of their pupils to expend themselves in healthy bodily exercises, they must win their laurels at the desk and in the examination-hall. That competition now making itself felt in every preparatory school, was formerly confined to the arena of professional life, and was not entered upon until after the period which divides adolescence from manhood, and marks the full development of the nervous system and of the physical powers.

Unquestionably the present age can boast of its progress in every art and science, but it appears to me that its most significant and characteristic feature is to be found in the circumstance that it is essentially a period of extreme, nay premature, mental activity and competition. This excessive mental activity extends to all pursuits, and lends a fierce stimulus to every calling by which the educated classes earn their bread. Regarding, as I do, this mental strain as one of the characteristics of the age, I believe we must seek for its origin in the general spread of education which has, it is to be feared, somewhat fostered an unhealthy contempt for manual and mechanical labour. It has been intensified by the adoption of a system of competitive mental tests of competency. With the extension of compulsory education and the increasing overcrowding of the professions this struggle for existence by brain-work would appear likely to become more severe. It is true that in this contest for civil employment and professional pre-eminence the "survival of the fittest" may possibly result; but the struggle itself is, I

believe, attended with such serious risk to the mental integrity of the competitors that it occurs to me as not inopportune for this Association to raise a warning voice against the evil effects of mental strain and overwork.

By *mental strain* I mean that condition of cerebral tension which is involved in the continued exercise of the mental powers at the highest limit of their capacity. Such a strain, when submitted to on exceptional occasions, and sustained for brief periods of time, is, of course, quite compatible with the preservation of mental and bodily health; but, when exerted continuously and for long periods, it constitutes *mental overwork*, is incompatible with the preservation of mental and bodily health, and prematurely exhausts cerebral power.

The important questions now present themselves:—What are the conditions of modern civilised life which especially produce mental strain and overwork? What are the symptoms that by their presence indicate mental strain? Can we say when mental strain amounts to overwork? I shall now attempt to answer these questions.

First as to the conditions of modern civilised life that produce mental strain and overwork. These are by no means limited to the field of intellectual labour; but it will be convenient, before dealing with the callings of adult life, to refer to the aspect of the case as it affects the young. I have already incidentally expressed an opinion to the effect that the severity of some of the Civil Service Competitive Examinations necessitates an undue strain upon the mental powers of youths preparing for such tests, before the age of puberty. Judging from analogy throughout the animal kingdom, it would appear that, physiologically, the natural outlet for the energies of the young animal is to be found in physical exercise; and I think there can be no question that, if left to the guidance of his inclinations, the ambition of every healthy youth is to excel in feats requiring bodily strength and skill. This beneficent instinct towards the development of the physical powers fulfils physiological purposes of the highest importance to the future well-being of the young animal—in games of skill the senses are sharpened and learn to respond quickly to external impressions, the muscles are developed, educated to co-ordinate action, and their constant exercise gives breadth to the skeleton, rendering the thorax capacious and elastic. If the constant bodily exercise, upon which a healthy muscular development

so materially depends, be at this age neglected in favour of study, the opportunity, the inclination, and the beneficial results are alike wanting later in life. Although I have not met with instances of well-marked injury from overwork before puberty, so far at least as mind is concerned, I feel satisfied that much "nervous" suffering in after life can be traced to undue exercise of the mental powers before, and during, the perilous period which marks this physiological change. The substitution of sedentary occupation, in the close and heated atmosphere of the schoolroom and study, for healthy out-door pursuits leads, I believe, to a precocious development of the sexual instinct with all its attendant evil consequences. I think it will be found that the too successful student, who has devoted his early years to constant application to books, becomes in after life a hypochondriac; the development of his nervous system has far outstripped the evolution of his physical powers; and, whatever his literary accomplishments may be, he is apt to be found wanting in that moral equilibrium which would best enable him in his maturity to withstand the petty trials and worries of active life. I do not for a moment contend that it is injurious to the youth or the junior student to work hard, and very hard, for an examination; but, to borrow a comparison from the sporting world, such an effort ought to be regarded as "a spurt," as exceptional in fact; and his average intellectual work ought to be duly interrupted by adequate bodily exercise in the open air. One injurious effect of the extreme severity of many competitive examinations, is that the candidate who has "crammed" and successfully passed, is sometimes disposed, from the reaction following upon exhausted energy, to regard his labour in life as accomplished, and to exhibit a complete inability to undertake any serious work afterwards. The suspicion has become somewhat general that candidates who have passed these severe examinations are not adapted for the practical daily-recurring labour of life; that, in point of fact, their training has "taken the work out of them," and in a recent Editorial article in the *Lancet* the writer puts this point very plainly, quoting the observation of a shrewd and successful observer who remarked that he would have nothing to do with a young man who had passed a competitive examination, on account of the exhaustion of energy to which I have just referred. If this is a frequent result of competition, or rather of the labour that precedes competition, it certainly appears that the mental strain must be severe and

continuous that can thus deprive the nervous system of vital energy, and leave so small a residuum of volition-power available for the up-hill battle of life. Steel may be exquisitely polished, and *too* highly tempered to make a weapon fit for use. In the same article reference is made to the evidence given before the select committee appointed to enquire into the system for training naval cadets, alluding to the evil effects of the competitive system of examination when applied to mere lads. In the young the symptoms that indicate mental strain will, I believe, be found to appear in the following order: chronic cerebral congestion, indicated by flushed cheeks and headache towards evening, the pupils unduly dilated with a tendency to myopic vision, tinnitus aurium increased towards night, and upon stooping; tendency to congestion of the hæmorrhoidal vessels with sympathetic irritation of the genital organs. There is also a peculiar tendency to diaphoresis confined to the axillary regions, and only experienced during great mental exertion, or when suffering from anxiety. The sleep next becomes disturbed by dreams, not of an agreeable character; talking through the sleep is common, and the over-worked boy, or student, so far from "babbling of green fields," finds that in his unconscious cerebration he is going over the same tasks that occupied his mind in the day time. If mental application be continued after these symptoms have persisted for some time the thoughts are wont, night and day, to run in the same groove, and the student cannot by any effort of will divert them into another channel. Sleep ceases to be refreshing. These are all indications of mental strain. One further symptom of alarming import marks the line that divides strain from over-work, that symptom is *sleeplessness*.

Next, as regards adult life. In our present state of civilization, constant examples of mental strain are met with amongst the official, the professional, the commercial, and the literary classes.

In speaking of the official class, I do not refer to those holding public employment whose hours of labour are defined. A public servant engaged during the usual hours, however laborious his duties may be for, say, six hours a day, incurs no danger of being over-worked; but it is far otherwise with the higher class of officials whose duties involve great responsibility. In their case the weight of responsibility, not strictly limited within specified hours, cannot be laid aside at will, and when they turn their backs upon the

scene of their official labours, it is not unfrequently the case that their spare hours are passed in hard reading, or in anxious thought, and often under the influence of that feeling of suspense and uncertainty which arises from the difficulty of providing against contingencies, or of selecting one out of several possible courses of action. There are few men of any wide experience who will not admit that, when an intricate and delicate duty has to be performed, one of the great difficulties of life is to select the best of many possible courses which appear calculated to lead to its fulfilment. There may be few positions in which the sense of duty or of justice do not point to the end towards which our efforts ought to be directed, the difficulty really consists in reconciling that which it is right to do with the course that may from circumstances of expediency, prejudice, or precedent, offer the line of least possible resistance to the attainment of that desired end. Objections have thus to be carefully balanced, consequences forecast, and an estimate formed of the amount of reliance to be placed upon the integrity and the intelligence of subordinate agents who have to be employed in carrying out the line of action eventually decided upon. All this leads to worry, and constant worry begets mental strain. Another influence which acts detrimentally upon minds greatly overtaxed with public responsibility is the sense of their inability to act with promptitude. However pressing may be the necessity for immediate and decisive action, as presented to their own minds, their public acts are so hemmed in by official forms and precedents that their energy is strangled, and they struggle with a sense of moral suffocation. An anxious public servant is almost sure to suffer from mental strain in the effort to overcome the inertia of departmental obstructions standing between him and the performance of a pressing duty. In this class the symptoms that denote mental strain are irritability of temper, and excitability with regard to trifles, symptoms most certainly indicating impending exhaustion of nerve-power. In this state it is not uncommon for some trifling annoyance to take hold upon the mind, altogether out of proportion to the attention it would have received if the health had been unimpaired by work, and nervous power at its usual standard. The peculiarity of this symptom is that some small vexation takes complete possession of the attention for a time and increases the irritability just referred to, not by its importance, but by its wearying persistency. I

think this is a very constant attendant upon a state of mind harassed by undue strain from the cares of office. Towards the close of every session of Parliament, the irritability of exhausted nerve-power is to be observed amongst the occupants of the Treasury benches. The sufferers are conscious of this change in their temperament ; and if the sense of strain is not soon relieved by a voluntary holiday, or an enforced retirement owing to an attack of gout, it passes into overwork. And here again the line of demarcation is marked by the advent of sleeplessness.

In the professional class the most marked examples of strain and overwork are, I believe, to be found amongst successful advocates at the Common Law Bar. With the exception of one calling, to which I shall presently refer, I know of no occupation that makes such severe demands upon the mental powers as that of the barrister in extensive practice. The limited time at his command for mastering his briefs, the exhaustive forensic efforts he has to make in court, the close and sustained attention to be given to the evidence of witnesses, the rapid mental analysis of such evidence with a view to cross-examination, the classification and grouping of facts necessary for a successful address to a jury—all constitute a very severe strain upon the faculties of attention, memory, and comparison. And it must be remembered that this mental labour and bodily effort have to be endured for hours together, under great physical discomfort in the vitiated atmosphere of a crowded court. Another circumstance which tends to produce mental strain in the overworked members of the Bar is this, that the advocate's highest efforts are often required at a time when he is physically below his average standard of health. Very few persons are endowed with such uniform health and mental vigour as to feel always able to respond to the calls that may be made upon their intellectual powers. Most men, without being actually ill, experience from time to time the consciousness of being below par in respect of their mental energy ; and indeed with many persons this feeling amounts to a sense that the discharge of the daily duties of life has become a burthen that they would fain lay aside for a day or two, and indulge in rest. At such a moment, when vital energy appears to be low, and mental exertion amounts to a torture, the barrister may have to appear in court and spur his jaded powers to a supreme effort in the cause of his client, and for his own reputation. Now this constitutes a

very real mental strain, and is followed by marked prostration. And, when efforts of this kind become frequent; when the days are too short for all his engagements, and he is obliged to read his briefs far into the night—the barrister at last finds that everything he does requires an effort; that he is unequal to his work; that he is constantly spurring himself to perform what he has undertaken; and, as his nervous system becomes more shattered, he feels a vague consciousness that his powers are failing, he distrusts his resources, regards himself as a mere legal drudge, and, at moments asks himself whether any success can compensate him for the increasing loss of rest, and of that energy and elasticity necessary for the commonest enjoyment of life. At this stage attacks of vertigo are common, and a frequent symptom is the sudden occurrence of a feeling of inexplicable dread—a fear of some shapeless calamity impending—a sensation of being morally bowed down by a vague horror which cannot be described in words. In this stage of extreme mental strain thoughts of suicide occasionally intrude themselves with remarkable suddenness. It is fortunate for the sufferer if he curtails his engagements before he is warned by total loss of sleep that the strain upon his mind has reached the point of overwork.

There are other circumstances connected with the professional class which I may shortly enumerate as tending to produce mental strain; and they apply with much force to our own calling. In the competition of the present day the struggle of life is in itself a sufficient strain; and when we remember that, notwithstanding hard work, such a degree of success as would insure freedom from pecuniary care rarely comes to the young professional man, it is highly probable that the *res angusta domi* of the present, combined with the feeling of uncertainty as to the future, favours other conditions constituting a minor form of mental strain. Sometimes, even with moderate success, if the work imposed is very constant, men of scrupulous temperament suffer from a feeling of morbid anxiety as to the proper discharge of their duties; they take their work too much to heart, and a distressing feeling of being unequal to their responsibilities is very liable to supervene, and to pass into a form of strain that is particularly difficult to deal with, and that occasionally deepens into a state of mind but little removed from melancholia. In contrast to these examples I should imagine that amongst the class of teachers, the very monotony of their

occupation, the daily dinning into dull and inattentive ears of the same well-known facts, must be calculated to produce bodily weariness and even mental strain. And yet, so far as I can ascertain, the mental powers very rarely suffer amongst teachers.

Amongst those engaged in commercial pursuits well-marked examples are to be seen of the injurious effects of mental strain and overwork. In the commercial class the actual amount of mental labour would not, I believe, induce exhaustion; but that undue haste to become rich, which is always a characteristic of high states of civilization, begets an amount of anxiety that becomes an important factor in the production of strain. Speculations of an extensive character; risks out of all proportion to the means at the command of the venturer; undertakings whose successful issue hangs upon the good faith of distant governments of unstable character; overtrading; stock-exchange gambling; all these conditions constitute a web of inextricable complexity surrounding the enterprising commercial man of the day, and rendering his life one of constant excitement. Telegrams arriving at all hours with fluctuating quotations, and producing rapid alternations of hope and fear, must preclude all possibility of mental repose during the pauses of any legitimate business in which the speculator may be engaged. In men whose nervous systems have been overwrought through the exhaustion brought about by this modern form of lust of wealth, the symptoms of mental strain commonly appear with alarming rapidity. The usual health is enjoyed up to a certain period, when, without much warning, the sufferer finds himself suddenly stricken with a most marked indecision of character. The cool judgment upon which he prided himself seems at once to have forsaken him. He is engaged in transactions requiring rapid decision; he finds himself wholly unable to decide upon his course of action. Very small matters perplex his judgment. Now it will often happen that men of perfectly sound mental powers feel such an amount of indecision as may result in their letting matters take their course; but, in these cases of mental strain from over-speculation or multiplicity of business cares, there is this peculiarity about the indecision that the sufferer can neither decide upon doing or upon not doing anything. He remains in a pitiable state of doubt, gives an order, and, before it can be executed, countermands it; and, such is his infirmity of purpose that he goes through the

process of ordering and counter-ordering until his friends reluctantly perceive that he is not the man he formerly was. He is himself conscious that he is out of sorts, and suspects that he would be the better for it if he left his business for a time and took a holiday; but he is unable to do so; he cannot summon resolution to leave the scene of his labours, or to restrict his operations, albeit he is wretchedly conscious of his inability to attend to his affairs. In this condition he begins to be haunted by fears of bankruptcy, and the visit of some person with whom he is very intimate leads to his taking his friend into his private room; he closes the door, hesitates as if about to make a confidential communication, breaks down, and probably bursts into tears in his presence. He is in fact in that condition of emotional susceptibility that we so constantly witness after paralytic seizures. His nights become sleepless, and he presents the most marked features of exhaustion of mental power. This form of over-work is in its next stage marked by fixed delusions of a depressing character, and here we reach, if we have not already overstepped, the border-land between overwork in a sane mind and insanity proper. I have seen cases of this kind pass into the expansive form of insanity, and go on to general paralysis. Irrespective of these forms of mental strain from the cares brought on by speculative transactions, many commercial men are exposed to great mental anxiety from causes beyond their own control, and not least amongst these must be counted the sense of wearing uncertainty arising from their dependence upon the acts and the fidelity of subordinates for the performance of obligations undertaken, such as the execution of contracts, which may be wholly frustrated by strikes and other unforeseen impediments.

It only remains for me to refer to one calling, peculiarly the offspring of our modern civilization, that furnishes cases of mental strain and over-work out of all proportion to the numbers engaged in it. The calling to which I allude includes the members of the press, and especially those engaged in Parliamentary reporting and writing leading articles. I know of no occupation that produces such an exhaustive drain upon the mental powers and vital energies of those engaged in it. The reporter, like other men, often has his engagements in the day time; frequently he is occupied in the law-courts, and gets through a fair day's work before the Legislature meets in the evening. There his hardest work begins at the hour when others seek that repose that alone

can insure a renewal of nervous power. In the discharge of his duties as a reporter, his attention is diverted rapidly from one topic to another. The very act of short-hand writing is in itself a beautiful and intricate example of coördinated movement, and calls upon the stored energies, not alone of the brain, but also of the spinal cord. A succession of words strikes upon the auditory nerves, is recorded by the brain in the act of attention, volition sends an impulse to the ganglionic centres presiding over the brachial plexus, and the muscles of the hand faithfully trace the symbols that represent the very words as they fall from the speaker's lips. During this process the exercise of attention is intense, concentrated, and prolonged—the whole nervous system being in a state of extreme tension. When to this mental effort we add the mechanical labour of afterwards writing out the notes thus taken, a task extending far into the night, we shall not be surprised to find that a condition of mental strain is almost constant amongst the accomplished men thus engaged. The earliest indication of this strain is observed to be an increasing difficulty in fixing the attention; afterwards many experience a temporary condition approaching to "scrivener's palsy,"—a loss of power over the muscles of the ball of the thumb and index finger. The next symptom is connected with congestion of the nervous tunic of the eye, and is evidenced by cerebral congestion with special throbbing of the brows, and occasionally, when writing late at night, the appearance of a crimson spectrum of the letters traced upon the paper. Amongst reporters, when the health breaks down, diabetes is very frequently present. Fortunately for those engaged in this exhaustive occupation, the session only occupies half the year. Amongst leader writers mental strain results in some measure from the character of the intellectual work they have to perform, but still more from the circumstances under which it has to be executed. In the first place, the writing of leading articles is a task requiring almost the highest intellectual gifts. The writer is supposed to possess a complete knowledge of subjects the most intricate and diverse, as well as a very uncommon power of condensing that knowledge within narrow limits and under an attractive form. If leading articles could be produced at perfect leisure and in the solitude of the study, half the difficulties would disappear; but it is to be remembered that the conditions under which such articles are very frequently written are in the last degree unfavourable to the writer. A debate of great political import-

ance takes place in either House and is not concluded before midnight, or telegraphic despatches of grave import reach the editor long after midnight. The leader writer who deals with the debate must there and then master the news of each speaker, and write his article amidst interruptions of every kind; the writer who has to deal with the telegraphic news is expected, in an interval that is to be counted by minutes, to produce a brief essay of consummate merit, showing the bearings and importance of the latest news. Both writers work under the pressure of the consciousness that every moment is of importance. It is no easy task under these circumstances to concentrate the whole mind upon what has to be done, and to abstract the attention from the conversation going on around. Worst of all to the writers' nervous system is the sense of hurry—"it is the pace that kills," whether the effort be across the Epsom Downs or in the field of literature. The constant recurrence of these sudden calls upon the stored energies of the leader writer renders his occupation one of an exhausting nature, and exposes him to all the bad effects of mental strain.

I began this paper with the reflection that each age appeared to be marked by the predominance of some particular branch of study. It strikes me, however, that at the present day every field of inquiry is occupied by countless labourers in the cause of progress and of knowledge; every profession thronged by ardent students, every intellectual calling, perhaps, overstocked by willing competitors. Modern civilization has even produced some callings that were formerly unknown. The spread of education has become so general that, notwithstanding the multiplicity of intellectual pursuits, the supply of those who seek to live by brain-work, rather than by the toil of their hands, exceeds the demand. This excess of supply over demand has produced a competitive system of intellectual tests—these have gradually increased in severity—and hence training for them has to be undertaken at an increasingly immature age. The claims of education are gradually and steadily infringing upon the years that formerly were devoted to exercise and school-boy's play. The shadow of future competitive examinations, which at first curtailed the sunshine enjoyed by lads in the higher forms of our public schools, next shortened the playtime in elementary schools, and now fairly darkens the threshold of the nursery. That which is encouraged as emulation in the child, deepens into competition in the boy, and ripens into fierce professional

conflict in the man. In the intellectual avocations of adult life, in commercial callings, a reckless expenditure of nervous power appears to be the rule, moderate toil and a patient expectation of the fruition of effort the rare exception. Manual labour is held somewhat too much in contempt; the artistic handicrafts that, in a less artificial condition of society, were cultivated with ardour, are now neglected; the health-giving pastoral and agricultural pursuits, for which our colonies offer a boundless field, are considered unfit for the educated thousands who crowd the walks of professional life. Such a state of society cannot be considered healthy, and, from a psychological point of view, is not unattended with risks. How often do we observe a youthful brain, precociously brilliant in its promise, associated with a feeble frame and a halting circulation. Such an organism requires rather the care of the physician than the culture of the schoolmaster. The high pressure education and intellectual competition of the age in which we live, may perhaps be credited with much of the bodily suffering and mental anguish that spring from the various prevalent forms of nervous diseases. Beyond a doubt no system of training could be devised more radically unsound than the present when applied to the offspring of families in whose histories there lurks the taint of mental unsoundness.

Believing that no earthly rewards can compensate for the loss of health of mind and body, I have ventured to glance at some of the injurious effects of strain and overwork as they have presented themselves to my own observation. Such a note of warning, uttered before such an audience, may have the effect of inducing greater moderation on the part of those who are overstraining their mental powers in the effort too quickly to attain position, distinction, or wealth; it may persuade a thoughtful few to lead a more restful life; it may save much nervous suffering to the rising generation, who are preparing by undue mental toil to enter upon that competitive struggle in which to the few fall the prizes, while disappointment awaits the greater number. The Roman satirist, after reviewing the various hopes, ambitions, and pursuits of mankind, sums up, as the highest expression of human happiness to be sought after, in these words:—“*orandum est, ut sit mens sana in corpore sano*”—a truth spoken for all time.

*Report of Three Cases of Short Attacks of Insanity with some Remarks on the Discharge of Recovered Patients.* By J. A. CAMPBELL, M.D.

CASE 1st.—H. J. M. Admitted July 29th, 1872; female; 18 years; single. Hereditary predisposition existed in family; she had at one time been excited for a day or two, and been treated at home; she had lately been subject to considerable anxiety, and had to sit up frequently at night nursing a sick relative. Ten days ago became excited, talking much incoherently; was sleepless, and took food ill. For the two days previous to admission had got worse, more excited, had attacks of hysterics, and did not sleep at night. She had not menstruated for two months.

*On admission.* Was in a state of great excitement, most restless and noisy, but could speak coherently and answer questions correctly when she chose to exercise self-control.

*Physically.* She was a slight-built, healthy looking girl, of average height. Temp. in axilla  $99.4^{\circ}$ ; pulse 96 weak. Examination of chest showed heart and lungs to be healthy.

July 30th.—Was restless and did not sleep during the night.

July 31st.—Was restless and noisy during the day, took food ill, ordered drachm doses of tr. valerian co. in water thrice daily.

August 8th.—Is much improved, well-behaved, rational in conversation. Sleeps well at night; at times complains of pain in head.

August 10th.—Is keeping well; was ordered an iron and aloes pill thrice a day.

August 29th.—Having kept well since last entry was to-day discharged recovered.

CASE 2.—M. McG. Admitted Jan. 28th, 1875; single, 25 years of age. Had one previous attack of insanity, for which she was for a short time under treatment in an asylum.

Little was known either about her or as to her family history, except that at menstrual periods she was excitable and irritable. She had become suddenly much excited, tearing her hair, throwing the dishes about, singing and shouting.

She had not slept for two nights, she complained of pain in the side. Menstruating sparingly; said to have caught a cold at beginning of menstrual period.

*On admission.* Mentally she was depressed, emotional, crying; able to answer questions correctly; for most part coherent in her remarks; memory unimpaired; no delusions could be elicited.

*Physically.* A tall, dark complexioned, slight-built woman. An examination of chest showed a normal condition of heart and lungs; breasts bore evidence that she had been a mother.

Temp.  $97.8^{\circ}$ ; pulse, 72; weight, 125lbs; pupils equal, abnormally dilated; tongue slightly furred.

Jan. 29th.—M. t.  $97^{\circ}.6$  ; e. t.  $98^{\circ}$  ; m. p. 66 ; e. p. 96. Lay quietly during the night. Has taken food fairly since admission. Is to-day very nervous and emotional.

Jan. 30th.—Slept well last night; has taken food well, is quiet and dull.

Feb. 1st.—Is quiet and well behaved ; eats and sleeps well.

Feb. 3rd.—Had slight diarrhoea to day, probably caused by change of diet.

Feb. 5th.—Quiet, civil, reasonable, industrious and cheerful, eats and sleeps well.

Feb. 11th.—Having kept well up to this date, and an informality having existed in the medical portion of her admission order which could not be rectified, she was discharged recovered.

CASE 3.—H. H., Commander R.N. Admitted August 7th, 1873 ; 64 years of age ; had been a sober, quiet going man. Several relatives had been insane ; he had once been under treatment in an asylum, and had a short attack when at home. These attacks had been of short duration, and at long intervals. He was said to have had a sunstroke when on foreign service.

He had been out of his usual health for a week, then became excited, fancied he was on board ship, broke the crockery, slept little at night, and took little food.

*On admission.* Mentally he was in a state of great excitement, talking incessantly in a loud voice ; fancied he was on shipboard, issued orders at pitch of his voice ; evidently has hallucinations of vision.

*Physically.* A healthy-looking, stout-built man. Temp.  $99^{\circ}$  ; pulse, 120 ; pupils equal ; conjunctivæ suffused ; reflex action dulled ; heart and lungs normal ; tongue furred, protruded straight ; articulation slightly slipshod.

August 8th.—Restless most of the night ; shouting orders in nautical terms. Talking in an incoherent rambling manner to-day. Did not take food well.

13th.—For the last five days has been much excited and restless, has been out for a walk daily ; at night is most noisy and restless, piles his bedding and sits on the top of it naked ; says he is in his cabin on board ship ; shouts and issues orders ; won't take medicine as he is afraid of being poisoned.

14th.—Been better to-day ; slept six hours last night ; is more coherent in conversation ; took his food well.

23rd.—Since last entry this patient has slept well every night, and been daily getting better. Is now quite orderly, coherent in conversation, and apparently quite well.

Sept. 2nd.—Having kept well since last entry, was to-day discharged recovered.

The first was a case of hysterical excitement in a girl whose

history showed marked hereditary predisposition to insanity. She had been excitable previously though never to such an extent as on this occasion. In all probability if treated at an earlier date for her menstrual irregularity, she might not have required asylum treatment. She was in the asylum 31 days. I saw no reason to detain her as she appeared quite well, and she has kept well ever since.

The second was a somewhat similar case; though I could not ascertain it as a fact, I have little doubt but that hereditary predisposition existed in the case. The attack was of very short duration; evidently the worst of it was past before she came under my care. An informality having existed in the medical certificate on which she was sent to the asylum, it induced me to discharge her at an earlier date than probably I would otherwise have done. She was apparently quite sane the third day that she was in the asylum. She was fourteen days in the asylum.

In the third case, the history showing a return of a very short attack of insanity, with a long interval of mental health, induced me to discharge the patient at the earliest possible date, in order to allow of his enjoying home comforts for as great a length of time as he could. I am aware that he kept well for a year. He was twenty-five days in the asylum.

I may mention that the short remarks I am about to make in regard to the discharge of recovered cases, are mainly in the hopes of eliciting the opinions of members of this Society, whose experience must necessarily be large.

It may be considered that when a patient has arrived at the recovered stage, the medical attendant may be thankful, and not trouble himself much more about the case, but practically this is not so, many considerations of a serious aspect have to be taken into account. Of these three have principally to receive attention, viz.:—

How long should the patient be kept under observation in the asylum?

What is the probability of a recurrence of the disease, and within what time?

In what manner are the patient's home surroundings likely to affect him?

The length of time after apparent recovery for which the patient should be kept under observation, must, of course, be much modified by the nature and history of the attack of insanity. I am of opinion that it may be reduced to the shortest limits in the following forms of insanity:—

**Puerperal Insanity.** The tendency of going on to recovery being almost certain.

Insanity of drinking of the acute form, where abstinence alone is necessary to prevent recurrence of the mental disease. Forms of insanity consequent on a debilitated state of health, such as from hyperlactation and starvation, where an improvement in the bodily and mental state has been gradual and coexistent.

Cases of excitement dependent on functional derangement, hysterical insanity.

Cases of recurrent attacks of mania, in which the history of the case distinctly shows a tendency to a short attack, and a long remission of the disease.

The home surroundings, the character of the patient's relatives, and in the working classes the facilities for the discharged patient at once getting steady work (this latter need not at present be considered, as anything in the shape of man gets work and is fairly paid) all combine either to militate against the patient's doing well out, or to aid in sending him back to the asylum.

I have known several patients, who appeared in every respect likely to remain well, have to be sent back to the asylum apparently from having to contend with home difficulties and circumstances which even a person who had not been insane must have found very trying indeed.

There can be little doubt but that the probability of a recently recovered case of insanity continuing well, is greatly increased by going to a well-ordered home, where the influences tend to increase self-control, and to put in use the laws of health. Many discharged patients, in whom hereditary predisposition is strongly marked, have, on recovery, to put up with considerable annoyance from their supposed sane relatives. There are at present several patients under my care, in whose case it has been a matter of wonder to me what mode of selection sent them to the asylum and left at large the relatives that visit them.

The class of cases which necessitate being kept for a considerable period under observation, are those in which melancholia has been a prominent feature, where impulsive actions have been very noticeable, and cases in which recurrence of maniacal attacks has been frequent and uncertain.

To arrive at a conclusion as to when it is safe to discharge patients whose mental state presented these phenomena, is undoubtedly a subject which demands the most careful con-

sideration from the medical man, both as regards the safety of the patient and the public. In many cases the deceptive appearance of recovery would, I have no doubt, have caused a little anxiety in the mind of Solomon had he been in the practice of this branch of the profession.

In many of these cases of a doubtful nature, which one clearly recognises as requiring to be kept for a considerable time under observation, especially in those where a suspicion of a tendency to injure themselves has existed, one finds it most difficult to avoid discharging them at too early a date. The pressure of the patient's daily solicitation for discharge, his complaints of being quite well and kept in the asylum doing nothing for himself; the opinion of his relatives frequently backed up by that of, in their minds, a very wise neighbour, after an interview with the patient of about 20 minutes; all these, joined to the medical man's wish for as many recoveries as possible, and, perhaps, for room for an acute case, have their effect.

The tendency at present is, I think, undoubtedly rather to discharge patients who might be better kept in the asylum, than to detain persons who ought to be outside.

The question of testing the patient's mental state, by allowing him freedom in the asylum grounds or outside of them on parole, and discharge on probation, are subjects on which I should like to hear the experience of others. As regards granting parole outside the grounds, the system does not act well at Garlands; the class of patients that have to be dealt with are too deficient in a sense of honour, and it appears to me that suitable steady work seems more beneficial than relaxations that are insufficiently appreciated. To those patients who have shown a tendency to self-injury, I think it is well to be guarded in granting parole, because, if an error in judgment occurred, and an unlooked-for self-injury took place, the result would be worse if it happened while the patient was an inmate of the asylum than if it occurred at his own home.

*Discharge* on probation seems to act very well in many ways. It facilitates the immediate return of the patient if unfit for life at home. It assists the patient to exercise all his self-control, to be aware that for a given time he is only on probation, and in certain cases it assists the relatives in dealing with self-willed convalescent patients.

The chief drawback about discharge on probation is that

it adds greatly to the anxiety of the asylum physician, who gets his fair share of that commodity.

To have to keep on the asylum books, and enter as would be done with a patient in the asylum, any accident that may befall a person who has been nearly a month a hundred miles from the asylum, is, I think, almost more than should be required.

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*A Visit to a Turkish Lunatic Asylum.*—By JOHN H. DAVIDSON, M.D. Edin., Medical Superintendent of the Cheshire Asylum.

In the course of a tour, last autumn, through Greece, Turkey, and Asia Minor, I had the pleasure of making the acquaintance of the Physician-in-chief of the Asylum of Constantinople and neighbouring provinces, and through his courtesy and kind attention I was not only enabled to visit the *Timar-khané*, or *Dari-chifa*, as it is sometimes called, but also to obtain some interesting information respecting the care and treatment of the insane by the Turks more than three centuries ago. Up to a recent date, the insane were taken care of in the Asylum of Suleimanié, situated near the mosque of that name, but in consequence of the building being unable to meet the demands made upon it, the patients were removed to the Asiatic side of the Bosphorus, and lodged in the Asylum of Toptaschi in Scutari. The asylum, which is situated in the most Oriental and most beautiful suburb of Constantinople, on being approached, presents a rather dilapidated and neglected-looking appearance, and this aspect has been all the more heightened by the recent ravages of fire in the immediate vicinity; but the situation is most salubrious, as it catches the pleasant breezes from the Bosphorus and the sea of Marmora. The building is quadrangular, consisting of two storeys and surrounding a court, in the centre of which there is placed a fountain at which the patients perform their frequent daily ablutions before prostrating themselves in prayer at the calls of the muezzims from the minarets of the neighbouring mosques. The day and single rooms on the ground floor open into an arcade or colonnade which surrounds the entire building. The upper floor is used for dormitories which open into a corridor. In these the better class of patients sleep, and the more tur-

bulent and excited sleep in the single rooms on the ground floor. The windows are protected by strong wire lattice instead of wooden lattice, as is the custom in all Turkish dwellings, and the flooring of both upper and under storeys is of tessellated pavement, which reminded me very much of that seen in the *strada dell' abbondanza* in Pompeii.

The staff of the superior officers of the Asylum is composed of a Physician-Superintendent, two medical assistants, an under surgical assistant, a dispenser, an inspector, an imam, a secretary, and a steward. In addition to these, there are a cook, a laundress, and thirty-two attendants, eight of the latter being females, who are under the direction of the inspector,—the only officer resident in the asylum. At the time of my visit, the asylum contained three hundred male and seventy-four female patients, the Caucasian, Ethiopian, and Mongolian races being each more or less fully represented. The paucity of females as compared with males is to be attributed, in a great degree, to deep-rooted religious scruples, for, so far as I could learn, mental alienation is not less prevalent in the East among the women than the men. It is certainly the *dernier ressort* with the Turks, the placing of females in an institution for the insane.

As regards the admission of patients to the Asylum it may be stated that there is no special law in the Ottoman empire upon the subject. A few simple formalities only are observed; and even in this enlightened age the Mussulmans only think of incarcerating such lunatics as are well known to be dangerous to themselves, or others, the popular notion being that the treatment of mental disorders is beyond the domain of medical science, and that the malady is only amenable to the skill of the exorcist. Patients must therefore have given undoubted proofs of furious mania before the Turks would dream of secluding them in an asylum. Except in the circumstances stated, all lunatics are allowed to remain at home, and some are even permitted to ramble about the streets in a state of complete nudity, their relations regarding them as objects of veneration and sources of prosperity.

As soon as a patient is brought to the Asylum, the doctor, or, in his absence, the secretary, furnished with a set form of questions, records the answers that he can gather from the relatives or friends who accompany the patient, and in those cases where the information appears insufficient, they are invited to return to the Asylum, that the answers to the inquiries may be completed. The fullest information is gene-

rally supplied by the police who bring cases to the asylum. The patient on admission is immediately washed and clothed in the asylum uniform, the patient's own garments being carefully stored away until the time comes when he may be in a condition to leave the asylum. In the event of death, however, all that belongs to him is handed over to his relations or heirs, but failing either, the *Beit-ul-mal* succeeds to his property. The process of washing being completed, the patient is conducted into the asylum court and placed among the other inmates. Immediate isolation is never resorted to except in cases where the patients are violent or suffering from bodily injuries. An obstreperous case is invariably restrained by means of the camisole and placed in a single room or cell until the arrival of the doctor, who usually orders a shower bath as a disciplinary measure. Those who have sustained bodily injuries are placed in small isolated chambers, and attendants, with trusty convalescent patients, are told off to watch and wait upon them.

All the inmates, poor or rich, Mussulmans or Christians, must be dressed in the Asylum clothing. The attendants themselves are attired exactly like the patients, except that there is a slight difference in the colour of the tunic and the head-dress. To each patient in the Asylum Government grants two suits annually, one for summer, and the other for winter wear. In summer the patients all wear a white-felt cap and a white linen vest, covered by a long variegated robe, like a dressing-gown, and tied in the middle with a worsted girdle; in winter a tunic of heavy cloth is substituted, over which is placed an outer garment, padded with wadding, and to the ordinary shoes worn are added the Turkish woollen slippers. This costume very much resembles that worn by Dervishes, and the felt head-dress contributes not a little to heighten this resemblance. In fact, from the dress of the patients, and the order and tranquillity which reign throughout the establishment at the Physician's visit, it has almost as much the appearance of a cloister of Dervishes as of a hospital for the insane. The body linen is changed weekly, and the external clothing once a month. This general change is preceded by a vapour bath, in which the patients are thoroughly cleansed and shaved. Personal cleanliness being strictly commanded by the laws of Islamism, the Mohammedan patients never, or very rarely, manifest the slightest reluctance to the bath, but rather the contrary. The Physician-Superintendent says that their love of the bath and of

personal cleanliness contrasts strangely with the aversion exhibited to all ablutionary processes by the few Christian inmates, who, by their education and knowledge, generally belong to a much superior class of society.

I did not see any of the patients at their meals, but the food is considered healthy and abundant; indeed, the majority of the inmates were never so well fed at their own homes. Dr. Mongeri considers it has but one fault, and that is its sameness. He has, however, endeavoured to remedy the defect by suppressing once a week the ration of butcher's meat, and employing the price in the purchase of fresh vegetables; and since this arrangement was made, scorbutus has completely disappeared, having been formerly the plague of the establishment. The following is the daily allowance by Government to each inmate of the Asylum:—Bread, of middling quality, 25 oz.; Mutton, 10 oz.; Rice,  $3\frac{1}{2}$  oz.; Onions, 1 oz.; Butter,  $\frac{1}{2}$  oz.; Dried Peas, 1 oz.; Salt,  $\frac{1}{2}$  oz.

The patients have two meals a-day, morning and evening, and these are taken in common. The refectory consists of two chambers, communicating with each other. The tables are fixed to the floor, and round them wooden forms are placed. The *salle-à-manger* in the women's quarter is similarly furnished and arranged. The food is divided in the kitchen, and served in plates, or tinned copper porringers, while the service of the table is performed by convalescents, under the surveillance and direction of the attendants. At one time the patients did not dine in common, but the associated system has for some years been practised with much benefit to the patients. The Asylum population is made up chiefly of the indigent class, labourers, field-workers, soldiers, &c., but there are a few patients belonging to the well-to-do and wealthy classes.

In ordinary circumstances, the patients are visited by the Physician-Superintendent three times a-week. The visits are made at fixed hours, and in different quarters of the Asylum, according to the season. In the summer and autumn months, a wing of the gallery, bordering the court, is selected for the inspection, where the patients are ranged sitting cross-legged upon low benches, covered with India matting. All patients, except those engaged in domestic duties, or confined to bed, must be at the place of inspection at the appointed hour. The Doctor, accompanied by his medical assistants and the inspector and head attendant, slowly proceeds along the line of patients, occasionally stop-

ping to make interrogations. The patient generally rises to reply to the questions addressed to him, which chiefly refer to his health, his wants, and his conduct. In certain circumstances, and specially as regards new admissions, care is taken to conduct them into the Physician's private room, where they are subjected to a long and minute examination, for the purpose of ascertaining the nature and extent of their physical disorders. All acts of insubordination at the visit are immediately repressed by a shower-bath, which is besides invariably employed as a deterrent to those newly admitted who have not yet conformed to the rules and discipline of the establishment. The shower-bath is always given in the presence of a numerous staff, in order to over-awe the patient, and to dispel from his mind all idea of resistance or struggle. A strict discipline is maintained throughout the Asylum, but as the number of patients who have committed murder and arson continues yearly to increase, strict measures are found expedient. The Physician considers that as the Asylum contains so many heterogeneous elements, the least relaxation in the observance of the rules of discipline would not be slow in giving birth to the gravest disorder, and necessitating the return to the days of the chain and the *gullabi*.

The Asylum preserves, as historical curiosities, the chains, collars, *fallaca*, and other instruments of restraint formerly in use. These have been replaced by the camisole, but, except in very turbulent cases, little recourse is had to it, as the heat of the country renders its employment painful, and even dangerous. Reil's belt is, however, sometimes used to restrain the masturbators, pickers, and certain melancholics with well-ascertained suicidal tendencies. To subdue excitement a prolonged bath of ten or twelve hours' duration is the treatment most frequently adopted. Besides the Turkish bath, the institution is well supplied with *baignoires couvertes*, such as are met with in the asylums of France and Belgium.

The employment of the patients is exceedingly restricted, owing to want of space, for beyond the performance of a few domestic duties and a little tailoring, the patients have really nothing to do. The amusements consist of the games of backgammon and chess, in which only a few engage: many prefer to smoke in quiet the narghillé or chibouque, but the majority give themselves up to the pleasures of *kief* and the *dolce far niente*. A journal called the "Djeridei-havadis" is furnished to the Asylum, and those who can read collect

around them, in true Oriental fashion, their less accomplished fellow patients, and read aloud for their general edification.

Whether insanity is on the increase in the East or not it is difficult to say. Some think that it is, but do not attribute it to the development of civilization in the country. The causes, however, to which insanity is chiefly to be assigned in Turkey are, I believe, the increasing secret abuse of *raki*, excessive indulgence in venery, *esrar*, and opium, but above all to the ravages of syphilis and tuberculosis. Religious excitement is also not an uncommon cause—chiefly amongst the dancing and howling Dervishes.

As a few words regarding the management of the insane in Turkey in the sixteenth century may not be uninteresting, I shall now give an English *précis* of some information on the subject, collected by Dr. Mongeri from the archives of the mosque of Sultan Suleiman, and which he most kindly supplied me with:—

In 1560 an asylum for the insane, bearing the name of the Suleimanié, was erected in the neighbourhood of the mosque just mentioned. It was richly endowed by its generous founder, and there was a numerous staff attached to it. The number of insane inmates was limited to twenty, and there were no less than 150 persons assigned to their service. This statement will doubtless appear fabulous, or at least an exaggeration, to all those who are not acquainted with the East, but it will only slightly surprise those who have an intimate knowledge of its manners and customs. The resident staff was composed of the *Achdji-Bachi*, or chief cook; the *Hamandji*, or chief of the bath; the *Tellak-Bachi*, or chief of the cleaners; the *Tomrouk-Aghassi*, or chief of the dungeons; the *Gullabi*, or chief keeper; the *Meidandji*, or chief of the sweepers; the *Sacka-Bachi*, or chief of the water carriers; and these had all under their orders troops of subalterns more or less numerous. The wages of the latter consisted of a daily allowance of bread and rice and a few paras of monthly pay. In the interior of the Asylum a large vapour bath was constructed, and here lay the principal duty of the *Tellaks*. This bath consisted of three chambers, heated to different degrees, and each contained a basin or reservoir of water. The rooms communicated with one another by very narrow doors, and there is still to be seen on the stone pavement the iron rings to which the patient was fastened in order to make him submit to the cleansing operation. The necessary ablutions being completed, the patient was returned to the *Gullabi*, or to the

Tomrouk-Aghassi if his excitement was great. The Gullabi, in returning a patient to his cell, always took the precaution to use the iron collar and chain, no matter whether the patient was violent or tranquil. The chain, however, did not always suffice to insure tranquillity, for the patients sometimes managed to break, by force or cunning, the solid rings to which they were bound. It was then that the Tomrouk-Aghassi interfered to restore order. If in spite of his interference, or rather in consequence of it, the lunatic shouted and disturbed the quietude of the establishment, the *Falakadjis* were called in, that the patient might receive the bastinado.

The tailor and furrier of the establishment inspected regularly twice a year the clothing and furs of the lunatics, so that these might be repaired or renewed if necessary. The great dignitaries of the empire, anxious to please their Imperial Master, frequently distributed superb furs, and in many instances complete suits, among the insane. The mosque scribes sometimes came to the Asylum when a distribution was likely to take place, and if the number of lunatics was incomplete, it was no uncommon thing to see those worthies playing the rôle of madmen in order to participate in the general distribution.

The food of the insane had been an object of especial consideration on the part of the founder of the Asylum, for in the vast kitchens of the establishment a large staff prepared dishes of the most *recherché* and delicate character, and it is said there is still to be seen in the archives of the mosque a bill of the expenses incurred for the maintenance and equipment of hunters charged to furnish the necessary game for the consumption of the lunatics.

Sultan Suleiman in erecting the Asylum near the Mosque and the *Tib-Khané*, or School of Medicine, was evidently desirous of putting within its reach the resources of these two great establishments, while he at the same time insured to the public the means of finding there physicians as well as medicines. The labours of the dispensers attached to the Asylum assumed extraordinary proportions, especially at the approach of Spring, when many came for purgatives, or for the famous *Nevrouz* electuary, which, according to popular tradition among the Turks, is a real panacea.

Amusements, prayers, and exorcisms, also played a most important part in the moral treatment of the insane. In front of the rooms of the lunatics stone stages were erected, upon which bands of musicians, companies of comedians

and numbers of buffoons and jugglers exercised their talents for the delectation of the patients, and, as a recompense, these *artistes* were exempted from paying the fees exigible for permission to pursue their respective callings. The leading ulemas of the mosque gravely occupied themselves in ascertaining, according to the principles of demonology, which spirit it was, of the seventy thousand who dwelt in the air, that caused the excitement of the lunatic; and on this discovery being effected, the learned ulemas called to their assistance a spirit of a different order, whose beneficent influence would destroy the pernicious action of the malevolent spirit that annoyed or tormented the lunatic.

As time rolled on, the lunatics confined in the Asylum became neglected, and not many years before the appointment of the present energetic Physician-Superintendent, Dr. Mongeri, their condition was deplorable and their treatment most horrible. All regulations as to food, clothing, and amusements had been forgotten, and dirt and filth had taken the place of the former cleanliness. A *Timarkhanedji*, whose principal duty was to order the distribution of the soup prepared at the neighbouring *imaret*, or cook-shop of the poor, assisted by four brutal porters, constituted the entire Asylum staff. The Asylum precincts were the rendezvous of the vilest and most disreputable characters, and the scenes that took place there the pen refuses to describe. Government was at last forced to interfere, and institute a proper organization.

When Dr. Mongeri assumed the direction of the establishment, he had many difficulties and prejudices to contend with, but these have, in a great measure, been happily overcome by his unflagging energy and indomitable perseverance, and the patients now confined in the Timar-khane experience a judicious and humane treatment.

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#### *Automatism.*

In the *Union Médicale* of July 21st and 23rd, 1874, Dr. E. Mesnet relates the particulars of an interesting case of automatic mental action. His paper is entitled *De l'Automatisme de la Mémoire et du Souvenir dans le Somnambulisme pathologique*.

A sergeant in the French army, aged 27 years, was wounded at the battle of Bazeilles by a bullet, which fractured the left parietal bone. He had power enough to thrust his bayonet into the Prussian soldier who wounded him, but

almost at the same instant his right arm, and soon afterwards his right leg became paralysed. He lost consciousness, and only recovered it at the end of three weeks, when he found himself in hospital at Mayence. Right hemiplegia was then complete. By the end of a year he had regained the use of his side, a slight feebleness thereof only being left. Some three or four months after the wound peculiar disturbances of the brain manifested themselves, which have recurred since periodically. They usually last from fifteen to thirty hours, the sound intervals between them varying from fifteen to thirty days. These alternating phases of normal and abnormal consciousness have continued for four years. In his normal condition the sergeant is intelligent, and performs satisfactorily the duties of a hospital attendant. The transition to the abnormal state is instantaneous. There is some uneasiness or heaviness about the forehead, which he compares with the pressure of an iron band; but there are no convulsions, nor is there any cry. He becomes suddenly unconscious of his surroundings, and acts like an automaton. His eyes are wide open, the pupils dilated, the forehead is contracted, there is an incessant movement of the eye-balls, and a chewing motion of the jaws. In a place to which he is accustomed he walks about freely as usual, but if he be put in a place unknown to him, or if an obstacle is put in his way, barring his passage, he stumbles gently against it, stops, feels it with his hand, and then passes on one side of it. He offers no resistance to being turned this way or that, but continues his walk in the way in which he is directed. He eats, drinks, smokes, walks, dresses and undresses himself, and goes to bed at his usual hours. He eats voraciously, and without discernment, scarcely chewing his food at all, and devours all that is set before him without showing any satiety. General sensibility is lost; pins may be run into his body, or strong electric shocks sent through it, without his evincing the least pain. The hearing is completely lost; noises made close to his ears do not affect him. The senses of taste and smell are lost; he drinks indifferently water, wine, vinegar, or assafoetida, and perceives neither good nor bad odours. The sense of sight is almost, but not quite, lost; on some occasions he appears to be in some degree sensible to brilliant objects, but he is obliged to call the sense of touch to his aid in order to apprehend their nature, form, and position; they produce only vague visual impressions, which require interpretation

into the language of touch. The sense of touch alone persists in its integrity ; it seems, indeed, to be more acute than normal, and to serve, almost exclusively, to maintain his relations with the external world. When he comes out of the attack he has no remembrance whatever of what has happened during it, and expresses the greatest surprise when told what he has done.

Through the tactile sense trains of ideas may be aroused in his mind, which he immediately carries into action. On one occasion, when walking in the garden under some trees, he dropped his cane, which was picked up and put into his hand. He felt it, passing his hand several times over the curved handle, became attentive, seemed to listen, and suddenly cried out, "Henri," and a little while afterwards, "There they are, at least twenty of them ; we shall get the better of them !" He then put his hand behind his back, as if to get a cartridge, went through the movements of loading his musket, threw himself full length upon the grass, and concealing his head behind a tree, after the manner of a sharp-shooter, followed, with his cane to his shoulder, all the movements of the enemy whom he seemed to see. This performance, provoked in the same way, was repeated on several occasions. It was probably the reproduction of an incident in the campaign in which he was wounded. "I have found," says Dr. Mesnet, "that the same scene is reproduced when the patient is placed in the same conditions. It has thus been possible for me to direct the activity of my patient in accordance with a train of ideas which I could call up by playing upon his tactile sensibility at a time when none of his other senses afforded me any communication with him."

All the actions of the sergeant when in his abnormal state are either repetitions of what he does every day, or they are excited by the impressions which objects make upon his tactile sense. Arriving once at the end of a corridor where there was a locked door, he passed his hands over the door, found the handle, took hold of it, and tried to open the door. Failing in this, he searched for the keyhole, but there was no key there ; thereupon he passed his fingers over the screws of the lock, and endeavoured to turn them, with the evident purpose of removing the lock. Just as he was about to turn away from the door Dr. Mesnet held up before his eyes a bunch of seven or eight keys ; he did not see them ; they were jingled loudly close to his ears, but he took no notice of

them; they were then put into his hand, when he immediately took hold of them, and tried one key after another in the keyhole without finding one that would fit it.

Leaving the place, he went into one of the wards, taking on his way various articles with which he filled his pockets, and at length came to a little table which was used for making the records of the ward. He passed his hands over the table, but there was nothing on it; however, he touched the handle of a drawer, which he opened, taking out of it a pen, several sheets of paper, and an inkstand. The pen had plainly suggested the idea of writing, for he sat down, dipped it in the ink, and began to write a letter, in which he recommended himself to his commanding officer for the military medal on account of his good conduct and his bravery. There were many mistakes in the letter, but they were exactly the same mistakes in expression and orthography as he was in the habit of making when in his normal state. From the ease with which he traced the letters, and followed the lines of the paper, it was evident that his sense of sight was in action, but this was placed beyond doubt by the interposition of a thick screen between his eyes and his hand; he continued to write a few words in a confused and almost illegible manner, and then stopped without manifesting any impatience or discontent. When the screen was withdrawn he finished the uncompleted line and began another.

Another experiment was made: water was substituted for the ink. When he found that no letters were visible he stopped, tried the tip of his pen, rubbed it on his coat sleeve, and then began again to write—with the same results. On one occasion he had taken several sheets of paper to write upon, and while he was writing on the topmost sheet it was withdrawn quickly. He continued to write upon the second sheet as if nothing had happened, completing his sentence without interruption, and without any other expression than a slight movement of surprise. When he had written ten words on the second sheet it was removed as rapidly as the first; he finished on the third sheet the line which he had begun on the second, continuing it from the exact point where his pen was when the sheet was removed. The same thing was repeated with the third and fourth sheets, and he finished his letter at last on the fifth sheet, which contained his signature only. He then turned his eyes towards the top of this sheet, and seemed to read from the top what he had written, a movement of the lips accompanying each word;

moreover, he made several corrections on the blank page, putting here a comma, there an *e*, and at another place a *t*; and each of these corrections corresponded with the position of the words that required correction on the sheets which had been withdrawn. Dr. Mesnet concludes from these experiments that sight really existed, but that it was only roused at the instance of touch, and exercised only upon those objects with which he was in relation through touch.

After he had finished his letter the sergeant got up, walked down to the garden, rolled a cigarette for himself, sought for his match-box, lighted his cigarette, and smoked it. When the lighted match fell upon the ground he extinguished it by putting his foot upon it. When the cigarette was finished he began to prepare another, but his tobacco pouch was taken away, and he sought in vain for it in all his pockets. It was offered to him, but he did not perceive it; it was held up before his eyes, but he took no notice of it; it was thrust under his nose, but he did not smell it; when, however, it was put into his hand he took it, completed his cigarette directly, and struck a match to light it. This match was purposely blown out, and another lighted one was offered to him, but he did not perceive it; even when it was brought so close to his eyes as to singe a few eyelashes he did not notice it, neither did he blink. When the match was applied to the cigarette he took no notice, and made no attempt to smoke. Dr. Mesnet repeated this experiment on several occasions, and always obtained the same results. The sergeant saw his own match, but saw not the match which Dr. Mesnet offered to him. There was no contraction of the pupil when the lighted match was brought close to the eye. He had once been employed as a singer at a café. In one of his abnormal states he was observed to hum some airs which seemed familiar to him, after which he went to his room, took from a shelf a comb and looking glass, combed his hair, brushed his beard, adjusted his collar, and attended carefully to his toilet. When the glass was turned round, so that he only saw the back of it, he went on as if he still saw himself in it. On his bed there were several numbers of a periodical romance; these he turned rapidly over, apparently not finding what he wanted. Dr. Mesnet took one of these numbers, rolled it up so as to resemble a roll of music, and put it in his hand, when he seemed satisfied, descended the stairs, and walked across the court of the hospital towards the gate. He was turned round, when he started off in the

new direction given to him, entering the lodge of the door-keeper, which opened into the hall. At this moment the sun shone brightly through a window in the lodge, and the bright light evidently suggested the footlights of the stage, for he placed himself before it, opened the roll of paper, and sang a patriotic ballad in an excellent manner. When he had finished this he sang a second and a third, after which he took out his handkerchief to wipe his face. A wine glass containing a strong mixture of vinegar and water was offered to him, of which he took no notice, but when it was put into his hand he drank it off without exhibiting any sign of an unpleasant sensation. Dr. Mesnet propounds the question whether in this perfect rendering of the three ballads he heard his own voice, or whether the singing was purely as automatic as his other actions. The attack came to an end before they could make an experiment to test this question.

When the sergeant is in his abnormal state it is impossible to awaken him to his normal state, whatever efforts may be made. No effect is produced either by stimulation of the skin or by strong electrical currents. On one occasion he was seized suddenly by the shoulders and thrown violently upon the grass; he manifested no emotion, but, after feeling the turf with his hands, raised himself again, calm and impassive.

A remarkable feature in the case is that the sergeant becomes a veritable *kleptomaniac* during the attacks. He purloins everything that he can lay his hands on, and conceals what he takes under the quilt, the mattress, or elsewhere. This tendency to take and hide has shown itself in each attack. He is content with the most trifling articles, and if he finds nothing belonging to some one else to steal, he hides, with all the appearance of secrecy, although surrounded at the time by persons observing him, various things belonging to himself, such as his knife, watch, pocket-book. His other actions during an attack are repetitions of his former habits; these acts of stealing are not so.

If we understand Dr. Mesnet correctly, he is acquainted with another individual who contrives means for committing suicide when he is in an abnormal somnambulistic state. "I have been present," he says, "at two attempts at suicide, one by poisoning, the other by hanging, which I have allowed to proceed to the extreme limit of an experiment, having cut the cord at the moment of asphyxia." He surmises that

another person might in the same way perpetrate homicide or become an incendiary, not knowing what he was doing at the time, and not remembering, after the attack had passed off, what he had done.

The resemblance between the sergeant's abnormal states and those transitory attacks of epileptic unconsciousness, during which the patient, unconscious of surrounding objects, continues automatically the act which he was engaged in at the time of his seizure, will be apparent to our readers. In this relation it is interesting to note that Dr. Darwin, the distinguished author of the *Zoonomia*, called attention long ago to the affinity between epilepsy and somnambulism.

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## CLINICAL NOTES AND CASES.

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*Aphasia and Chorea in General Paralysis.* By T. S. CLOUSTON, M.D.

The general progressive disease in the structure of the nervous centres, and the steady deterioration of their functions, that constitute by far the chief part of general paralysis, are attended in their course in some cases by various nervous symptoms that closely imitate many of the neuroses of sensibility and motion; such as neuralgia, amaurosis, locomotor ataxy, glosso-pharyngeal paralysis, hemiplegia, apoplexy and epilepsy. Indeed, it is not uncommon for cases of the disease to be diagnosed as epilepsy and glosso-pharyngeal paralysis. I have lately had three cases of the disease under my care, in two of which the ordinary symptoms of aphasia were present for a short period in one stage of the disease, and in the third the symptoms of unilateral chorea were well marked.

In the first case, that of a man, the aphasic symptoms came on at two periods of the disease, once soon after its commencement, when the motor and mental symptoms were very mild indeed. He was not excited or exalted at the time they came on, and had not had any congestive or epileptiform fits. He had been a hard working, anxious man who had suffered much from bleeding piles, was married, and the first signs of the disease were headache, dulness, depression, stupidity, causeless fear and suspicion, with easily excited emotionalism. About eight weeks after the

commencement of the attack it was noticed one day that he could not speak properly when asked a question; he clearly understood what was said to him, and tried to answer, but could not do so. When he tried very hard he would sometimes get out the first word, or first syllable of the first word of the answer but no more, *e.g.* in answer to "How are you?" he would say "Qui" for "Quite well." He would nod his head and look pleased when the sentence was finished for him. When asked the name of any common article he either could not name it at all, or called it by a wrong name, *e.g.*, called a chair a hat. At the same time there was much tremor of his lips and tongue when attempting to speak. Next day he was quite free from these symptoms, but about a fortnight after, he had another attack of a similar character and duration, after which he became silly and foolish in his conversation, and soon very excited, with exalted delusions as to having millions of money, seeing the Queen, &c. At the same time his right side became more paralysed than his left. The disease is running the usual course, the right side being still more affected by the motor paralysis than the other, no doubt indicating that the convolutions on the left side are most affected.

In the second case the aphasia was complete, and occurred after an epileptiform attack in the beginning of the disease. He has since had many such convulsive attacks of the most severe kind. They are the most striking feature of his case. When aphasic he knew what was said to him quite well; nodded his head and looked pleased when the proper answer was given for him, but could not say a word. This lasted for a few days, and then passed off. The motor paralysis is not in any way unilateral, but he has the "insane ear" on the left side.

The case of unilateral chorea happened in a lady with slowly advancing, very mild symptoms. The motor paralysis had gone the length that it was with extreme difficulty she could mount or go down a stair, and could not articulate long words, and the mental state was one of happy enfeeblement. She took a congestive attack, beginning with stupor, going on to convulsions of the right leg, arm, and face, with a high temperature, always over 100°. The unilateral convulsions came and went for a few days, leaving the side paralysed when they were not present; a temperature over 100° always going with the convulsion, and a

normal temperature with the paralysis. When they finally disappeared the paralysis was complete, but in a few days, the power of voluntary movement came back, first in the legs and then in the arms. Whenever she attempted to move her left arm it jerked about with the characteristic want of muscular co-ordination of chorea, and when she attempted to speak the muscles of her face and tongue on the left side were started into choreic twitchings, while her articulation was characteristically that of a bad case of chorea. When she ceased to exert voluntary power over face or arm the twitchings ceased. The choreic movements of the face have persisted, and, at present, are most marked. Muscles supplied by the seventh nerve are most markedly affected, all the facial muscles and the masseter muscles twitching; then the sixth nerve seems to be almost as strongly affected, the left eye turning outwards and upwards most markedly, producing conjugated deviation of the eyes; the right eye following it by inward movements, so that the axes of both eyes are not divergent. The third nerve is clearly affected, for the eyes twitch about at times in all directions. I could not make out that the fourth was at all affected. The glossopharyngeal and spinal accessory branches of the eighth and the ninth are affected, for she has much difficulty in swallowing portions of the liquids which alone she can swallow, squirting out on the left side of the mouth; the tongue cannot be put out properly, and moves in all directions when she attempts to put it out. Her speech is almost inarticulate, and her voice is excessively quavering; the muscles between the larynx and jaw twitch, and the left sterno-mastoid, and also the muscles supplied by the spinal accessory; the shoulder twitching up and back. The orbicularis palpebrarum to a very slight extent indeed, and the eye more so, are the only parts of the right side of the face that twitch. The pneumogastric is not affected.

The sensory nerves do not seem to be at all affected. She complains of intense pain in her teeth, but this I attribute to the sudden snapping of the jaws and grinding of the teeth, caused by the action of the masseter muscles.

This case is chiefly interesting as exhibiting in a very exaggerated degree, and unilaterally, the tendency to tremor and want of co-ordination of the muscles supplied by the cranial nerves that is always present in general paralysis, for in reality the impaired movement in this disease is closely allied to chorea. I have a woman now under my care where

the diagnosis is most difficult between chorea and general paralysis. The special lesion which causes them in this case must be high up, and I have no doubt it is in a special region of the convolutions that preside over the motions of the face.

*An unprecedentedly high temperature during a Congestive Attack in General Paralysis.*

A gentleman in the end of the second stage of general paralysis, whose symptoms, mental and bodily, had all along been mild, and who had had two or three slight congestive attacks, without convulsion, in an earlier period of his disease, with a temperature in each attack of  $102^{\circ}$ , was noticed to be very stupid; to be more than usually hemiplegic (he had been so on the left side to a slight extent during most of the disease), and on the following day twitchings of his face commenced, with increasing stupor. The convulsions increased, being more marked on the hemiplegic side, his temperature gradually rose from  $101^{\circ}$  24 hours before death to  $105^{\circ}$  12 hours before, until on the second evening of the convulsions, five hours before death, it reached  $107.4^{\circ}$ . He died comatose next morning, the convulsions continuing almost until he died.

At the post-mortem examination, in addition to the usual thickening of the membranes, a gelatinous false membrane, granular ventricles, and intense congestion of the brain everywhere, there were found apoplexies in the right hemispheres, from the size of a pin's head up to one or two inches, by one-and-a-half, in the middle lobe, where the brain substance was very much softened. Growing from the right corpus striatum, and projecting into the ventricles, was a small pearl-like glioma.

This case is interesting, not only in regard to the high temperature, but as showing, in an extreme degree, the tendency to blood stasis and apoplectic effusion in the brain during a congestive attack in general paralysis. I have never seen so large a clot in this disease. General paralytics are often seen to be more paralysed on one side than the other, especially after congestive attacks, but we do not always find any appreciable extra disease on the opposite side of the brain after death. In this case, however, this was most marked. The side that was most paralysed was most convulsed, and after death the congestion and the apoplectic tendency were far more evident in the opposite hemisphere of the brain.

*A Peculiar form of Transient Mania following an attack of Erysipelas of the Face.*

I lately saw a lady who a fortnight before had had an attack of erysipelas of the head and face of a very severe character, causing much swelling, shutting up the eyes, and being accompanied by slight delirium. All the acute symptoms of this had passed off, the temperature was down from 104° to normal, and the swelling of the face was abating, but still she could not open her eyes. About three days before I saw her she seemed to know that she was going out of her mind, for she asked her friends to keep her as long at home as possible before sending her away. She then began to wander in mind, and have hallucinations of sight and hearing, to mistake identities, and to fancy she had a child. She would go on talking to imaginary people; would especially keep up long conversations with God; would ask Him quite familiarly what she was to do if anyone requested her to take medicine, &c., and would fancy she got an immediate reply. Her amatory propensities were exalted, and her religious feelings and emotions both excited and perverted. Usually she lay in bed, but was at times very violent indeed. Her pulse was 86, and of fair strength, and her temperature 98·6°. She slept little. She took liquid food. She could open her eyes slightly with difficulty, but never did so, and evidently preferred to keep them shut, and live in her own world of fancies. Her state much resembled a waking dream. Impressions on her senses of hearing and touch were acutely felt, however, and made much impression often in diverting her from her unreal beliefs and hallucinations.

She got stimulants with a little chloral (10 grains) at night, and next day, thinking that the best way to correct her false sense impressions was to subject her to true ones, she was got out of bed, made to open her eyes and reasoned with as to the absurdity of her fancies, and certainly she seemed to be reasoned out of her delusions and hallucinations for the time, though she was unsettled in conversation. Her room was kept cool and well aired, and she was made to take much stimulants and nourishment. She showed a tendency to fall back once or twice into her former state, especially at night, but to a much less extent, and got quite well in mind in a few days.

To my mind the case is so far explained in this way. She

was of a highly nervous, but not insane family, and had not been robust in general health. She was very religious, and belonged to a denomination that is apt to be strongly emotional in its religious manifestations, and apt to refer any strong religious feeling to the direct influence of the Holy Spirit, as well as to look for and expect that direct influence in the direction of conduct, even in regard to the smallest matters. It cannot be doubted that such a hereditary brain constitution and such a training would tend towards hallucinations of the senses and "affective insanity," if the inciting causes of insanity were present in sufficient strength to upset the normal brain working. We have then a severe attack of a disease of the nature of blood-poisoning, with fever and delirium. When this passed off the brain was left anæmic, poisoned, and exhausted. No doubt the prevailing current of thought would be of a religious kind, and the emotion of thankfulness much excited, with a direct mental reference of her recovery to the Almighty, with much allusion to this in prayer by herself and her friends round her. Then there was wakefulness and want of brain rest. And all this while her eyes were shut, so that no normal impression was sent to the brain from the outer world by sight, while there were only a few muffled sounds in the invalid's room. What more natural, according to the accepted facts of brain physiology, than that the exhausted and still slightly poisoned brain convolutions should mistake the working of the centres of special sense for real impressions from without, as in a dream, and that the voice should be the voice of God talking to her? It is a curious fact, but one quite in accordance with experience, that as the religious emotionalism was thus excited, the emotionalism that relates to the love of the sexes was also greatly exalted, that in fact the strongest acquired and the strongest natural emotions should be excited; and a modest and exemplary lady applied the warmest terms of affection to her doctor and minister, wanting constantly to put her arms round them and lay her head on their breast, and fancied she had a child. It is equally consistent with what we know of the functions of the brain that stimulants would send more blood into its convolutions; that impressions from the real world, through the eye, would tend to correct the hallucinations, as when one is roused from a nightmare; that being got out of bed and fresh air let into the room, would strengthen the power of the brain to differentiate the

real from the unreal; and that then the influence of a vigorous, healthy mind, in rousing the comparing faculty by reasoning as to the absurdity of previous beliefs, should finally wake her out of this dream (for I look on the whole attack as much allied to this) into which she had fallen.

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*Two Cases of Epilepsy with Lesions of the Convolutions after Death.* By T. S. CLOUSTON, M.D.

I. M., æt. about 38, on admission 25th August, 1863. No history was got about him as he had been found in a stupid condition wandering about the town, by the police, and sent at once to the asylum, being certified by the medical man who saw him to labour under "Stupidity, forgetfulness of words, and incoherence in answering questions." After he became more sensible he was a particularly reticent man as to his previous history, never admitting that he took fits, and therefore resenting any enquiry as to what caused them, or how they came on. His obstinate silence may be inferred from the fact that he entirely baffled the Inspector of Poor and his assistants to find out his parish of settlement, his birth-place, or his relations; in fact the latter offered a reward of £10 to anyone in the asylum who would get from him definite information on these points, but without success. He admitted that he had drunk very hard, affirmed that he had been put here for drinking alone, and that he might have had "fainting turns" sometimes. He also admitted having had some sort of venereal disorder, and had, in fact, the cicatrices of healed buboes.

On admission he was very dull and stupid in mind, had a stolid expression of face, like a general paralytic, which, with his speech, that was slow and like that of general paralysis, led the assistant physician, who admitted him, to the diagnosis that he laboured under that disease.

As the lethargy and weakness of body present on admission passed off, it was found that he had partial paralysis of one arm. Unfortunately it is not stated in the record which arm was affected, but it is a legitimate inference from the pathological appearances found after death, that it was the left. This passed away in about three months after admission, and about six months after coming in he began to take epileptic fits of a severe kind, having had four or five in the three months between the March and June following. He had a fit on June 24th, one on Sept. 29th, one Nov. 2nd, and four in rapid succession on Feb. 28th. The distance between these dates pretty well represents the times between his fits for years thereafter, only that he almost always after that took them through the night. He often complained of very severe headache both before and after the fits, looked ill, and was a good deal exhausted.

He gradually got more lively and rational, though still remaining stupid and slightly melancholy for a time. He then got into the state in which he remained for the ten years he lived, viz., a slightly weak-minded but coherent, intensely irritable man, who would strike out at anyone on the slightest provocation or contradiction. He was most irritable after the fits. When he wanted anything he was fawning in manner, when denied his request he would as likely as not strike the refuser, or if he did not go that length he would certainly abuse him in the foulest and most vituperative language. He was a most unreasonable man to have no delusions or decided maniacal excitement. He would sometimes work at his trade as a shoemaker, and then without any sort of reason, stop work, resenting as a personal insult any arguments used to induce him to employ himself.

In the course of years he came to take a fit about every fortnight, and if a longer period elapsed he usually had two or three.

In 1872 he had cancer of the penis, for which the organ was amputated, but "neither the operation nor the subsequent healing process had any effect on the epilepsy." But in 1874 the glands of his groin began to swell and get hard, and soon ulcerated; and after this he had only one epileptic fit up till his death in Oct., 1874, a period of eight months.\* During that time also he was less irritable, though more feeble-minded. He had much hemorrhage from left groin towards the end of his life, this no doubt hastening his death. The fits had continued for eleven years.

*Post-mortem Appearances.*—Body very thin, and there was an enormous ulceration in left groin, with hardened cancerous tissue surrounding it. The glands of right groin were enlarged, cancerous, and an abscess had formed in one of them.

*Head.*—The inner plate of the skull-cap, in a circular space three inches in circumference behind and above the internal ear, was rough and eroded-looking. Portions of the temporal, parietal, and occipital bones were so affected. The dura mater lying under this was very rough on its outer surface, had many fine spiculæ of bone projecting from it, and was thickened in the centre of the patch to a quarter of an inch on section. It consisted at this part of an outer layer of very firm white fibrous matter, then a space containing a mere lubrication of clear fluid, and then the thickened dura mater, with an inner fibrous lining separable from it. It consisted, therefore, of three layers altogether at this part. Its inner surface all over the right hemisphere above and below was mottled, and slightly roughened by dark iron-mould-looking spots, as if from small extravasations of blood of a somewhat old date. The dura mater over the left side of the brain was much thickened in a limited spot, about two inches in diameter, in a position somewhat higher and anterior to the thickening on the

\* This fact was noted by Mr. Maclaren in his account of "Cases illustrating the effect of Peripheral Irritation in Epilepsy."—Ed. "Med. Jo.," Jan., 1875.

right side. The former was not nearly so thick, and seemed to consist of thickened dura mater with an inner fibrous lining separable from it. The bone was not roughened under it. The dark spots of old extravasations existed on left side, but were smaller and less numerous than on the right.

The upper part of the brain appeared almost normal, except that the arachnoid was thickened over the sulci. The pia mater was very exsanguine, and easily separable from the convolutions.

The base of the brain presented the following unusual lesions:—The under parts of both anterior lobes lying on the orbital plates were of a dirty-brown colour, the convolutions indistinct, shrunk, and softened, but the softening not going further apparently than the grey substance of each convolution. This condition was most marked, and the softening deepest in the centre of each space affected, becoming less marked towards the circumference, when it seemed as if some of the convolutions were just tipped on the centre of their convex surface with the diseased condition. The tips of both middle lobes were affected in the same way to a very slight extent, the right side being worst. On both sides at this point it was merely the convexities of a few convolutions that were affected, and on the convolutions near them were a few single dark shrunk-looking spots, about an eighth of an inch in diameter, quite separated from the main part affected.

Several of the convolutions on the lower part of the middle lobe had undergone simple atrophy to a considerable extent.

The tips of both olfactory bulbs had shared in the softening that surrounded them, and were quite dark and shrunk.

The rest of the brain was very exsanguine, and slightly œdematous, but otherwise normal.

*Microscopic Examination.*—The dark softened spots on the convolutions were found to consist of broken-down brain tissue, the cells being indistinguishable, and masses of blood-colouring matter, evidently the result of small apoplexies. This was confined to the crust of grey matter and did not extend to the white. The rusty spots on the inside of the dura mater were found to consist of masses of blood-colouring matter under the epithelial lining of the dura mater, or if anatomists had not succeeded in demonstrating that there was no arachnoid lining of the dura mater, one would have said that it was under a very distinct tough fibrous arachnoid membrane.

D. G., æt. 30; admitted 15th Oct., 1868; engineer; been five years an epileptic; fits followed a fall he had on the left side of the head in a ship; been getting worse mentally for some time and the fits more severe; has been very dangerous and suddenly violent to those near him; his mental state has tended to confusion, incoherence, and dementia, of late.

On admission he was a pale-faced, cachectic-looking man, very stupid in mind, and unable to give any account of himself. He soon began to take very severe epileptic fits every fortnight or three weeks, tak-

ing four and five in succession; often after each attack was very stupid and confused. He took them both by night and day. He never complained of headache.

At times he was clear enough in mind to give an account of his injury, and was quiet and comparatively rational, but was usually stupid and very confused in mind, and was never able to employ himself in any useful occupation. The fits were so severe and frequent that he was constantly running down in flesh, and looking pale and cachectic. He was very irritable and violent in an impulsive way. He fell off very much indeed in general health and strength for the last two years of his life. Tubercular disease of the lungs was suspected, and looked for from the general symptoms, but was never detected by physical examination. No abnormal symptoms were present during life. He took the fits to the last, as he had done in the first part of his disease. He died on the 8th April, 1875, twelve years after the fits began.

*Post-mortem Examination.*—*Ext. Appearances.*—Body very thin and poorly nourished.

*Head.*—Skull-cap thin but dense. In the squamose portion of the temporal bone, about an inch above and posterior to the fibrous portion, there was an irregular excrescence of bone projecting upwards, and closely adherent to this the dura mater, arachnoid, pia mater, and brain, all being matted together by tough fibrous tissue all round this part to the extent of three-quarters of an inch in circumference. Two or three of the brain convolutions near the part were atrophied and softened, and of a dirty-grey colour.

There was considerable ordinary adherence of the dura mater to skull-cap, and this membrane was much thickened, especially at the attachment of the falx, and under the left parietal bone. In the centre of this thickening there was a small spiculum of bone in the arachnoid about a quarter of an inch in diameter, and over this there was a small thin clot of blood on the dura mater, about three-quarters of an inch in diameter. This clearly bore a relation to the spiculum. There was considerable effusion under the pia mater, and the arachnoid was thickened and tough, but was everywhere, except at the point mentioned, easily removable from the convolution.

On section of the brain, it was found that the softening under the excrescence on the left temporal bone extended inwards as far as the ventricle, and the posterior end of the corpus striatum was also slightly affected.

The brain substance generally was pale, and there was interstitial atrophy round the vessels, giving on section a cribriform appearance. The medulla and pons were also in this state; cerebellum seemed normal. The right side of the brain was otherwise normal.

*Other Organs.*—The lungs were found both congested, and both had a very slight deposit of tubercle at apices of old formation. The peritoneum was studded with deposits of tubercle, varying in size from

a millet-seed to a pea. The membrane was also inflamed and vascular, with much deposit of recent lymph matting the abdominal viscera together. This no doubt had been the immediate cause of death.

*Microscopic Examination of Brain.*—The softened portions of the convolutions were found to consist of broken-down cells and fibres, with a considerable amount of crystalline blood-colouring matter and granular bodies, while the white softening consisted of shrivelled granular white fibres, compound granular bodies, granular bloodvessels, an apparently increased number of the nuclei of the neuroglia as well of its fibrous material, and a small amount of blood-colouring matter in crystals.

*Remarks.*—These are two examples of epilepsy connected with very decided pathological changes in the brain. Such cases are not uncommon, and when such changes are demonstrated after death we are apt to point to them and say, "There is the cause of the epilepsy," though we know that lesions like these have existed in others, and have been accompanied, not by epilepsy, but by quite other symptoms; we know also that there were old chronic lesions in each case that might have been expected to cause some constant head symptoms always present; yet the epilepsy was regularly periodic in each case, and seemed to differ in no degree in its symptoms, course, and effects from cases of ordinary hereditary epilepsy where no evident brain-lesion can be demonstrated after death at all. The slightest consideration must show that in addition to the actual disease in certain limited parts of the brain, in these cases there must have been in the whole organ, or, at all events, its great motor centres, a tendency to the irregular motor action that constitutes epilepsy. These cases did not merely take a few convulsive fits before death, but were true epileptics for many years, according to the strictest tests that even Dr. Russell Reynolds could apply. In fact there must have been, as regards the epilepsy, just as strong an original predisposition as ordinarily exists when regularly periodic maniacal attacks come on after an injury to the head. The lesions seen were only the exciting causes.

It is interesting to observe that in both cases the lesions chiefly affected the periphery of the brain, this being confirmatory of recent observations, pathological and experimental, that injuries to the convolutions are more apt to be followed by convulsions than when the internal parts of the organ only are affected.

As regards the origin of the lesions found in the first case

(J. M.'s) it was simply impossible to find it out. Were the disease of the internal tables of the skull and the enormous thickening of the dura mater due to injury with effusion between the bone and dura mater, or to inflammatory mischief, or to syphilitic disease? I incline to the first theory, taking the paralysis and the succeeding fits into consideration, though such effusion there is not common. It is clear that it happened shortly before his admission. The symmetrical thickening to a lesser amount on the other side might have been due to the same cause at the same time.

The universal tendency for small apoplexies to occur everywhere inside the dura mater, and in the grey matter of the convolutions at the base in the first case, and the same tendency round the spiculum of bone in the arachnoid in the second case, is to my mind a most noteworthy fact in the pathology of certain brain diseases, a fact not at all sufficiently taken into account as yet. Why should the small blood vessels burst in this way? What was the cause of the blood-stasis inside the head? I cannot see that the common mechanical explanation of an impeded return of blood to the brain during a fit is sufficient, for we see the same thing where there have been no fits, but merely acute maniacal attacks.

The disturbance of the nutrition of the tissues inside the head was well seen in the tendency to the formation of spicula of bone in both cases. That tendency must be very strong where such an unusual lesion is seen as a bony plate forming in the arachnoid as in J. G.'s case. The thin clot surrounding this shows well the irritative effect of such spicula.

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## PART II—REVIEWS.

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*De La Folie au point de vue Philosophique, ou plus spécialement Psychologique étudiée chez le Malade et chez l'Homme en santé.* Par Dr. PROSPER DESPINE.

This voluminous work by Dr. Despine represents his answers to certain questions put by the philosophic section of the Academy of Sciences, and for which he received the prize. As its title implies, he has endeavoured to treat insanity on purely psychologic considerations, not because he does not recognise a material form of insanity, but because he seems to think that it has been thus studied too exclusively of late. He evidently belongs to the class of thinkers represented by

Dr. Carpenter, whose name, however, he does not seem to have mentioned, and yet we meet with almost parallel passages to some in Dr. Carpenter's "Mental Physiology." On the whole, though rather too verbose, and though the same ideas are constantly repeated, the work is clearly written, the illustrations and quotations from various authors, both French and English, are numerous and aptly given.

Dr. Despine is not a pure spiritualist; whilst believing in the fact that man has a soul, he can yet rejoice that psychology is emancipated from the metaphysical doctrines of the Scotch school, and recognise this emancipation as due to the labours of such men as James Mill, John Stuart Mill, Herbert Spencer, and Bain. His patriotism, however, does not allow him to give these all his praise, but he endeavours to show that the experimental demonstrations of French physiologists opened the way to the study of the relation between physiology and psychology. He thinks English psychologists have followed too closely the footsteps of Auguste Comte, and are endeavouring to prove man to be a mere sentient machine, and also that they attach too much importance to the theory of evolution, which, as he says, is only a pure hypothesis, without any scientific basis, resting upon preconceived ideas supported by reasoning on analogy, so defective and deceitful in science. He considers that a retrograde psychology which endeavours to study the mind, and especially insanity, according to this theory; for, he affirms, without the moral element all scientific explanation of insanity is impossible. On the other hand, he is not slow to condemn the pure spiritualism of many of the French alienists. He argues that because the properties of mind are known and perceived by the mind itself, by the thinking being who possesses them, therefore mental action is something more than mere physical force; for physical bodies cannot say why they are attracted to one another according to the laws of Newton.

The book consists of two parts, the first of which treats of the Psychology of Reason, the second of the Psychology of Madness.

### I.—*Psychology of Reason.*

Mind is divided into two distinct faculties—the intellectual and the moral or instinctive faculties.

The *intellectual faculties* are endowed with various attributes. These are:—

1. *Perception*, by which the mind acquires a knowledge of the

exterior world through the organs of sense. In order that perception be clear, it is necessary—

- a. That the organ of sense be apt to receive a true impression from the exterior world.
- b. That the brain be sufficiently organised to transmit to the *me* a true impression.

## 2. *Memory*—

- a. The more vivid an impression is the firmer its hold, and that which excites the feelings, as a fearful calamity, or a personal insult, is more powerfully impressed on the mind than mere intellectual facts.
- b. The depth of the impression determines the duration of remembrance, and impressions are more deeply engraved on the mind the less the mind is overcharged with knowledge, other things being equal.

Besides a *psychic* memory there is an *automatic* memory. This automatic memory is shown in cases of dementia, by the patients reciting phrases, &c., which he does not understand.

## 3. *Reflection*—

This faculty embraces Attention—Reasoning—Judgment and Imagination.

The Intellectual Faculties are only susceptible of a single kind of alteration; this is feebleness, impotence, almost reaching, sometimes, to destruction. Perversion does not affect the intellectual faculties.

Dr. Despine recognises a law which, to a certain extent, regulates the direction the intellectual functions will take. But he thinks that whilst in former times philosophers had disregarded this fact, in more recent works it is made too much of. He strongly condemns J. S. Mill's proposition that association of ideas may be referred to the same laws as gravitation; for, he asserts, intellectual liberty is as real as moral liberty.

## *Moral or Instinctive Faculties.*

*Their Nature.*—They manifest the inclinations, propensities, repulsions, tendencies, and necessities of the soul, in a word, its instincts, and this not by an acquired instruction, or by a reflective act, but by a natural and spontaneous knowledge or inspiration. Hence the adjective *instinctive* indicates their nature.

The word *moral* implies the purpose for which they have been created: this is, to form good manners, to inspire

rational conduct, &c. It is very important not to confuse physical sensation with moral feelings, physical pleasure or pain with moral pleasure or pain. Moral faculties induce rational acts and good desires. All the faculties lead us to act in order to obtain a satisfaction either near or remote. The moral sense, however, induces us to act also by duty, even though doing so may cause pain. It also occasions remorse when an immoral act has been committed.

Dr. Despine endeavours to meet Dr. Maudsley's idea that the moral sense is formed as the instinct of animals, and is obeyed like them, almost blindly, by observing that when the moral sense causes a man to act from a feeling of duty, and do injury to himself thereby, it is not blindly obedient by an effort of the law of interest.

*Moral Contagion.*—Manifestations of all the instinctive elements of our mind, good or bad, have the property of awakening and exciting the same instinctive elements in the mind of witnesses who possess in a certain degree these same instinctive elements. It is by moral contagion that epidemics of insanity are formed and propagated.

This contagion may give rise to different thoughts and acts but of the same moral nature. Thus, what is good may engender various kinds of good acts, and what is evil various kinds of evil acts. In this last case, the contagion of bad feeling assumes a true character of *moral infection*. Dr. Despine attributes a good deal of the moral infection of the present time to the pernicious influence of the cheap press.

*Imagination* is not a simple faculty, but it is formed of—

1. A creative faculty, peculiar to imagination.
2. The various instinctive elements, and
3. The intellectual faculties, perception, memory, and reflection.

The difference between imagination and memory is easily shown.

*Memory* preserves and presents to the mind that which has been known, the object such as it has been perceived.

*Imagination* presents objects which are not like those that have been known; it composes, with the objects offered by perception, or recalled by memory, other objects different from those which have impressed the senses. Imagination is thus essentially creative, but it creates with the materials furnished by memory or by actual perception.

*Psychic Laws.*—Our mind forming part of creation, and

being naturally associated with the Divine plan, has not been abandoned to the caprices of chance, or of a blind fatality.

1. There is a law which presides at the exercise of the reflective faculties during the manifestation of the instinctive faculties. When the instinctive elements manifest themselves in the mind, when these elements comprise the object or part of the object which occupies the reflective faculty, the activity of the faculty takes an invariable direction, commanded really by a natural law. Observation shows that, in this case, this reflective faculty always operates in the direction of the actual instinctive inspirations. This law may be formulated thus:—*Man only thinks as he feels.*

The exercise of this psychic law ceases either when the sensations which direct it cease to be felt, or when an antagonism between two opposed sensations compels reflection to disengage itself from the instinctive elements, and to occupy itself with deliberation.

## 2. *The Law of Interest.*

This law rules all beings in nature, who are conscious of existing. It is the chief director of activity among animals and man. The principle which Darwin has formulated—*struggle for life*—is connected with the demand for the satisfaction of the instincts.

Man, however, is a moral and free being, who can consequently choose and act according to a higher motive, namely, a sense of duty. Man can always do what he desires most, when he does not feel obliged by a sense of duty to do that which he desires less. Nothing has so much power over the mind of man as to his manner of thinking than the witness of his instinctive conscience.

## *Reason—*

Reason is the faculty which distinguishes truth from falsehood, good from evil; which renders it possible to combine means to obtain particular ends; which grasps absolute truth; which makes man know how he ought to fulfil the purposes for which he was created. Madness is the alteration, the destruction of reason. Reason is not a special faculty, it is a product of the instinctive faculties. Man rarely possesses a complete moral reason. The powerful passions which he experiences frequently completely stifle in his mind the moral faculties which he possesses.

*Free Will—*

Dr. Despine enters into this somewhat fully, and considers it under the following heads.

I. *What is meant by free will?*—This question is a very complicated one.

*Free Will* is generally understood to be the power of *willing*; it manifests itself by decision, volition. There are many circumstances which modify our power of doing what we desire to do.

II. Conditions necessary for the existence of free will.

1. *The presence of the moral sense in the mind.*

a. *Relative free will.*—Free will varies according as the moral sense is greater or less.

b. *Partial free will.*—Man may be able to act freely in regard to certain desires but not in regard to others.

c. *Temporary free will*—or rather, *momentary* loss of free will.

2. *The intervention of the reflective faculty.*

a. In the creation of motives.

b. Operation of the reflective faculty which takes place on the creation of motives.

3. *Conditions necessary for the exercise of free will.*

*Volition—*

Man executes by volition that which he decides to do.

Entirely free volition is the executive power of free will.

## SECOND PART.

*Psychology of Madness.**Hallucination—*

Hallucination is not simply a product of the imagination; it does not represent an object after the manner of a dream, or of objective memory. It is caused by an internal excitation of the sensory nerves; the sensorial impression, however, is as real in this phenomenon as when an object strikes the senses. Dr. Despine claims the honour of being the first who has made an analytical study of hallucination.

A. *The part that the senses play in Hallucination.*

The sensory nerve need not be entire; a small portion of it, provided it be connected with the nervous centre of perception, is sufficient to produce hallucination. In order that hallucination be produced it is necessary;

1. That the excitation of the sensory nerve be analagous

to that which external objects produce in this nerve, and that the brain be ready to be impressed.

2. That the abnormal or *subjective* sensorial impressions be stronger than the normal or *objective* impressions which take place at the same time. If the objective be stronger than the subjective impression the hallucination disappears.

B. *The part that the mind plays.*

1. It furnishes by imagination or memory the object represented.
2. It perceives the object.

*Hallucination in the insane.*

A. Pathologic hallucinations of the insane.—These are mostly present when the brain is in a state of abnormal activity, without disorganization of tissue. They are always in relation to the delirious ideas. Hallucinations are a symptom, not a cause of insanity. The lunatic believes in his hallucinations, but when he recovers he recognises their falsity.

B. Hallucination produced by prolonged thought and pre-occupation of the mind in healthy persons. The stimulation (excitation) and congestion of the brain by prolonged exercise of thought, by exaltation from noble feelings, has been a cause of hallucination in many illustrious persons, as Socrates, Pascal, Luther, Mahomet, and Joan of Arc. Hallucination is contagious among the exalted, passionate, or fanatic. A person in a state of exaltation affirms that he sees or hears the object of the thoughts and aspirations of the assembled members, and this being vividly impressed on them, they also eventually come to believe that they can see and hear the same. This explains the affirmation, in all good faith, of pretended miraculous facts, &c.

C. Hallucinations without pathological or physiological excitation of the brain.

They show themselves when the mind is perfectly quiet, and arise from a spontaneous or pathologic excitation of a nerve at any part of its length. Thus, ulcerations of the cornea occasioned in one case the appearance of a plaster figure of the Virgin, and in another a brood of guinea fowl.

*Illusion.*—Illusion is to hallucination what slander is to calumny. Illusion embellishes reality; hallucination invents the whole appearance. Psychic illusions (which

alone occupy our attention) take their origin in the domination, in the blindness of the mind by a passion. Illusion is of two kinds.

1. *External* or psycho-sensorial. The mind sees objects not as they are, but as the predominating passion causes them to appear.
2. *Internal* or psychic.—The ideas which imagination conceives, under *the influence of passion*, are taken for realities.

*Insanity considered from the Philosophic point of view.*

*First Question.*—What is the distinctive character of insanity, and each of its varieties? Which of our faculties are more or less altered in this state? What is it that distinguishes this alteration from that we call a false, chimeric, or exalted mind?

The name “Insanity” ought to be applied, without any possible doubt, not to a disease of the brain, but to an abnormal psychic state, a state which, though being determined by a pathologic activity in the insane, is not, however, essentially connected with disease, since we meet with this same psychic state in healthy persons.

*Psychologic character of insanity.*

Madness is characterised by moral blindness of mind, in regard to the irrational inspirations of the passions. (Dr. Despine claims this as his own peculiar explanation of insanity.) The passions may absorb, dominate over, or blind the mind and hold it in bondage.

By the *passions* are understood all the irrational instinctive elements of the mind. There is no such thing as a good passion. When a man is under the influence of a passion either:

1. He experiences, at the same time, the moral feelings which are opposed to this passion, and which help him to feel and know that this passion is perverse, irrational; in this case he is reasonable—or—
2. He is so much under the power of the passion that it occupies him entirely and does not allow the normal feelings, opposed to these passions, to show themselves at the same time, and consequently he cannot appreciate the irrational, absurd, or false nature of his inspirations. This absorption of the mind by a passion is called the *passionate state*.

Not only do vivid and instantaneous passions produce this passionate state, but the calm and permanent, though

tenacious, passions, inherent in the individual may produce the same moral blindness. For it is not the violence of a passion that produces this effect, it is the absence of all instinctive rational opposition to the inspiration of this passion.

2. *Conditions necessary for the existence of insanity.*

1. One or more irrational, false, absurd, or immoral ideas, inspired by this passion.
2. Moral blindness of mind in regard to the irrational nature of these ideas.

*Different forms of Insanity.*

I. *Instinctive.* This includes the two orders, monomania and lypemania. Three varieties—

A. *First Form of Instinctive Insanity. Lesion of intelligence.*

Manifested by one or more delirious ideas, created by the imagination under the influence of a dominating passion, a passion which has been excited in the mind by the pathologic activity of the brain. These delirious ideas being inspired by the passion vary according to the kind of passion which animates the patient. In hypochondria the great sympathetic system is diseased, as much as, if not more than, the brain. It is wrong to say that hypochondriacs exaggerate their suffering; each of them suffers, both physically and morally, as he says he suffers.

*Delirium.* When delirium is derived directly from the passion which dominates over the insane person, we call it *direct delirium*. The crowd of delirious ideas, which are the consequences of direct delirium, are termed indirect delirium. These often appear as a pure aberration of the intellectual faculties; but it is not difficult to trace them to their source, and to prove their connection with ambitious and proud passions.

*Psychologic Genesis of Delirium.* How delirious ideas are formed. From the psychic constitution of man, nothing having so much power over the mind as its peculiar manner of thinking by means of its instinctive elements, it happens that when passion is predominant the inspiration of this passion takes pre-eminence over the knowledge acquired by study, and retained by memory. These acquirements lose their value before the passionate idea, if they are contrary to the designs of this passion. The very curious psychic phenomenon, in which the lunatic believes himself to be some one else, is not due, as Dr. Laycock believes, to cerebral alterations which affect the

memory, but is caused by the mind being dominated by some passion. The morbid ideas may change, either from some modification in the nature of the passions, or by some casual incident, or even without any cause, the passion remaining the same. One delirious idea may be substituted for another.

State of the various psychic faculties in the first form of instinctive insanity:

1. *Intellectual faculties*—*Perception*—is not altered; the insane may experience abnormal sensorial sensations, but these are purely somatic. *Memory* presents nothing abnormal, though it may be enfeebled. *Attention* is not abnormal nor enfeebled, it is fixed on that which concerns the predominating passion. *Reason* is not changed; the lunatic reasons as logically as formerly, but he takes the false inspiration of his passion as the basis of his premises.
2. *State of the Instinctive or Moral Faculties.* They may become perverted, and give rise to psychic disorders. This perversion consists in the appearance of certain passions, remarkable for their exaggeration, and by the disappearance of the moral faculties antagonistic to these passions.
3. *State of the Imagination.* The passions excite the creative faculty of the imagination, and direct it in the way of their aspirations. The false ideas thus produced have the entire confidence of the lunatic.
4. *State of Reason—Lucidity in Insanity.* The reason here referred to is not that which arises from intellectual acquirements, but that which has its source in the instinctive faculties. *Reason* always asserts itself, but this may be overpowered or stifled by a passion. When the passion is in abeyance, the moral feelings may raise their voice, and enlighten the patient as to their irrational inspiration. Thus reason may be partial or alternate with madness.
5. *Lucidity* may appear—1. When the alien becomes reasonable on the subject of his habitual delusion. 2. When the subject of his madness is suggested by a single passion and when this pathologic passion does not constantly occupy the mind.
- 6 *State of Free Will.* The alien may remain free in regard to the inspirations of his natural passion, which do not

possess the power of the pathologic passion, and which do not stifle the moral sense.

7. *State of the Will.* The will that proceeds from the desire is not free, since it depends on the nature of the experienced desire. The will which decides between good and evil, after a deliberation enlightened by the moral sense, is alone free.

B. *Second Form of Instinctive Insanity. Lesion of the Affections.* The dominating elements here are irrational, ridiculous, or immoral inclinations, desires and acts. They are essentially *active*. The lunatic possessed by a perverse passion which absorbs his mind, and which entirely animates it, experiences the desire to commit a violent immoral act; this desire is so imperious that it is felt as a necessity.

C. *Third Form. Lesion of the Will.* This is characterised by : 1. A perverse propensity which is inspired by an abnormal or pathologic passion, a propensity having directly as its object the perverse act itself, which does not rest on any motive taken from the natural passions, nor on any delirious idea. 2. By the strong power of this propensity which really becomes irresistible.

3. By a lively moral reprobation felt against the perverse propensity, which allows the individual to preserve his moral reason and his free will in regard to this propensity, to resist it, to struggle against it, as long as his will is not vanquished by the irresistible power of the propensity. Passion, then, does not blind the patient; there is no moral unconsciousness in regard to the passion as in the other forms, except during a violent paroxysm of the propensity.

Nothing abnormal is met with in the intellectual faculties. Perception, memory, and the reflective faculties are intact. Imagination does not interfere—there are no delirious ideas. Moral reason remains normal, the individual feels the perversities of his propensity, he reproves it and combats it as much as he can. This persistence of reason renders the word insanity inapplicable to the instinctive abnormality presented by these patients.

*Instinctive Insanity in Individuals attainted with General Paralysis.*—This is a quotation from an article by Dr. Legrand-du-Saulle.

*Instinctive Insanity in Epileptics—*

The causes that produce epilepsy influence the psychic passions in so pernicious a manner as to produce lesion of the affections. Perversion of the instinctive and excitation of the intellectual faculties are the psychic prodromata of this disease. When it is declared, the intellectual faculties lose their factitious power, and the instinctive elements present a peculiar state which determines what is called the *epileptic character*. Dr. Despine's researches lead him to believe that the accessions of epileptic fury are acts of automatic somnambulism, determined by the epileptic attack. Epilepsy may co-exist with healthy psychic functions, but this is rare.

*Instinctive Insanity in Hysteria—*

Hysteria has no connection with disease of the uterus or its appendages; the term ought to be banished from science. Dr. Despine suggest *nervosism* in its place.

*Somatic Phenomena of Nervosism or Hysteria.*—These vary according to the organs affected, which are—

1. Nerves of sensibility and motion.
2. Automatic nervous centres, the cord, medulla, cerebellum, and certain small nervous centres in the encephalon.
3. The great sympathetic system, its nerves and ganglia.

*Psychic Phenomena—*

At the same time as the preceding, different strange or perverted instinctive elements are observed to absorb the mind and stifle the moral feelings; in fact, put the patient into the passionate state. Where perversities of the natural passions, accompanied by absence of moral feelings, complicate the hysterical character, the most serious acts may be easily committed. The absence of remorse, after the accomplishment of these immoral acts, proves the moral unconsciousness of the individuals. However great may be the intelligence manifested by hysterical patients in order to satisfy their desires, they are not the less morally irresponsible, for all their intelligence is at the service of the different passions which dominate them.

*Mental alterations of the Second Class*, constituting the maniacal state, characterised by a partial destruction of the psychic faculties, and by a deep disturbance in the remaining faculties. In mania all the faculties of the mind are profoundly altered, the intellectual as well as the instinctive.

*Mental alterations of the Third Class—Dementia, Stupidity, Idiocy.*

These are characterised by the destruction, suspension, or absence, more or less complete, of all the mental faculties. Dements, imbeciles, and idiots are aliens, as they are not exactly mad; they can, however, exhibit the characteristic psychic state of madness when they experience passions.

1. *Dementia* is caused by senile or chronic pathologic alterations of the brain. It is not a primary form of mental alienation, it is only the natural termination of other forms. Though the *psychic* activity of the brain may be nearly destroyed, the *automatic* activity may still survive. The moral faculties are enfeebled and disappear as the intellectual faculties. Dr. Despine accepts Claude Bernard's organic law as the explanation of the return of reason to dements during the last hours of life. "When an histologic element dies, or tends to die, its irritability, before diminishing, begins to augment, and it is only after this exaltation that it decreases again, and gradually becomes extinct."
2. *Stupidity, or a State of Stupor*, is of two kinds—
  - a. *Pseudo-stupor, or lypemantic or active stupor*.—In these cases there is no paralysis of thought, but the mind is concentrated on the delirium inspired by some melancholy passion. This state is temporary; sometimes the moral insensibility is not complete, but the patient is unable to overcome his inertia; his will is paralysed.
  - b. *Passive or real stupor* is caused by some accidental circumstances, such as a profound moral emotion determined suddenly by an extraordinary event, &c. The cerebral activity, suddenly exhausted by moral causes, is diminished, suspended, or paralysed, and with it that of the psychic faculties.
3. *Imbecility and Idiocy*—  
 Dr. Despine enters very fully into the effects of alcoholic drink on the brain, and, consequently, on the manifestations of mind. He has studied them under three heads:
  1. Instinctive alcoholic insanity.
  2. Alcoholic mania.
  3. Brutishness and alcoholic dementia.

*Relation between the Brain and the various forms of Mental Alienation.*

Madness is not a disease of the soul; it is caused by an abnormal activity of the brain, the organ by which the soul

manifests itself. It is not, however, necessary to affirm that in every case of insanity there is an alteration in the texture of the brain. In antiperistaltic movements of the stomach, or abnormal secretion of gastric juice, the stomach is not necessarily altered; its activity is only modified. In order that the heart beat in a disordered manner, there is no need for its structure to be changed.

There is some relation between the state of the brain and the nature of the instinctive perversions manifested. Thus, a state of excitation, of pathologic superactivity of this organ, corresponds to gay, ambitious, proud, or generous passions; whilst a feebleness of this pathologic activity corresponds to a melancholic or depressing state.

*Psychological Classification of Mental Alienation.*

- I. *First Class* includes all forms of instinctive insanity characterised by perversion of the moral faculties and preservation of the intellectual faculties. These cases are due to abnormal pathologic activity of the brain, and not to organic alterations. If microscopic lesions are observed, these are due to the commencement of the organic affection which produces more slowly destruction of the faculties. Two forms which are characterised by—*a.* Excitation of the brain. *b.* Depression, or enfeeblement of the cerebral activity.
- II. *Second Class*.—General paralysis, or more correctly paralytic insanity. There is instinctive insanity with feebleness of the intellectual faculties; and a pathologic cerebral activity with a progressive destruction of tissue.
- III. *Third Class* is characterised by a combination of perversion of the instinctive faculties, and confusion, more or less great, of the intellectual faculties. Two forms:—
  1. *Acute mania*, with violence of all the psychic faculties.
  2. *Chronic mania*, without permanent violence.
- IV. *Fourth Class*.—In this we meet with a diminution or absence, more or less complete, of the intellectual and moral faculties. If this is produced suddenly after an attack of strong emotion it constitutes *stupor*. If gradually by paralysis and destruction of tissue, it forms *dementia*.

Dr. Despine has some interesting observations on Fanatics, whom he considers more dangerous than lunatics. He also enters very fully into a consideration of Moral Teratology, or a psychologic study of criminals, and their treatment and

prevention of crime, and does justice to the labours of Dr. Bruce Thompson, whom he quotes largely.

*Second Question.*—1. What are the psychic and moral causes of insanity? 2. What part does the brain play concurrently with these causes? 3. Has it been observed that insanity shows itself more at one time than another, under certain events, or certain ideas, either political or religious, or by the effect of certain works of the imagination? 4. Are there epidemic outbreaks of insanity, and how are they explained.

*Psychic and Moral Causes of Pathologic Insanity.*—Insanity from purely psychic or moral causes is rare, and the pathologic affections of the brain which produce insanity are nearly always due to several causes, to a union of physical and moral causes. The chief physical cause is cerebral feebleness, a particular disposition of the brain to be invaded by pathologic states which produce mental alienation. Every psychical act which fatigues the brain, which disturbs its activity and consequently affects its tissue, which causes congestion, etc., may, if the brain is not sufficiently strong to support the attacks, disturb its normal physiologic activity, and give rise to pathologic activity. Too prolonged application of the mind, which produces arterial congestion, as shown by redness of the face and eyes, by insomnia and cephalalgia, injures the brain.

The forced intellectual work to which some children are submitted, in whom the brain is debilitated, and when this organ has acquired neither consistence nor development, disposes to intellectual impotence—imbecility.

Abuse of alcoholic liquors is a most powerful cause of cerebral disorganisation, by virtue of this organic law:—*The deleterious action of alcohol makes itself more particularly felt on that organ of the body which by reason of the kind of life of the subject is more often fatigued.* Another cause is the state of febrile activity in which we live, as M. Thiers observed in the Chamber (30th July, 1868), “In our days, man is impatient of living; he will not allow to the acts of life, the time necessary for their accomplishment: that which should take a year he wishes to do in a month, that which demands a month, he wants to get done in a day, in an hour.”

Insanity is much more frequent among the lower classes (in France at least); this is due to the abuse of alcohol, to their extreme misery, with its accompanying debilitating physical and its depressing moral causes, rather than to in-

tellectual inactivity, as Dr. Richardson affirms. On the other hand, if we meet with in England many serious diseases, such as gout, rheumatism, gravel, affections of the liver, stomach and kidneys, among mind workers, these diseases are not due to their intellectual activity, as Dr. Richardson supposes, but to the fact that in England the class of mind workers are nearly always in easy circumstances or even rich; nearly all are used to too much animal diet, and too frequent alcoholic drinks, which are causes of the above-named diseases; absence of exercise also favours these diseases.

Dr. Despine believes that there is an antagonism between pulmonary phthisis and cerebral affections, which produce insanity. He agrees with Dr. Maudsley that the fatigue of the brain from excess of intellectual work is a cause of insanity much less powerful than the disturbance which emotions from moral causes produce in this organ.

Dr. Despine argues that the cause of there not having been any notable increase of insanity by the effects of the Prussian siege, and the domination of the Commune, is due to the fact that those who would have become mad were killed in the insurrection; being excited by alcohol and possessed by an audacious stupidity, they confronted danger without comprehending it.

*Physical causes* produce in the cerebral functions disturbances having nearly constantly the same characters, whilst *moral causes* do not, or the relation is only fortuitous.

The state of the circulation influences the cerebral function in an important way. Moral impressions act with energy on the great sympathetic system, which produce the various organic effects in emotion. In *paralysis* of the vaso-motor nerves the capillary vessels of the brain do not contract, the vessels become congested, and microscopic apoplectic spots are produced. In *excitation (stimulation)* of these nerves the capillaries contract, receive very little blood, and the brain is insufficiently supplied with the agent for exciting its activity.

Moral causes play an important part in the production of insanity, but always among persons whose brain is predisposed to pathologic affections.

Dr. Despine, relying on Dr. Robertson's opinion that insanity is not on the increase, in England at least, believes that the productive causes of insanity have reached their highest point of intensity.

On the question of insanity and civilization, he observes:

If there is a coincidence between the frequency of insanity and the progress of civilization, this is caused not by civilization itself, but by the numerous abuses which it introduces, which act especially on the brain and nervous system. We have to pass over his interesting observations on epidemics of insanity, some of which are very curious.

*Third Question.*—In what cases of insanity may it be useful to combat and even cure it by a treatment which only acts on the feelings, ideas, habits; in a word, on the moral and intellectual faculties? Give various experiences in this kind of treatment, etc., and the value of results.

1. *Preservative psychic treatment* of pathologic insanity.

This consists entirely of a translation (not, however, perfectly correct) of a large part of Dr. Maudsley's work, *Responsibility in Mental Disease* (or as Dr. Despine entitles it "*Crime and Madness*") with a few running comments. He does not believe in the efficacy of mere intellectual work, but says that only good instinctive feelings can counteract bad instincts or the passions; the practice of a calm, regular, and moral life may, however, ward off an attack, in persons feebly predisposed to insanity, but if the predisposition is great all moral precautions will be useless.

2. *Curative psychic treatment*—

*First indication.*—To calm the mind by removal from all exciting causes—to place the patient among strangers, who prove to him by contradictions and reasoning that his delusions are useless and injurious.

*Second.*—To rouse the spirits, when the cerebral activity is in a state of feebleness or torpor.

The patient should be under the care of one who understands his psychic and somatic state. He is to be closely watched night and day, and should know that he is watched. Erroneous ideas ought never to be encouraged; at the outset of cerebral disease where there is not a complete blindness of mind in regard to the inspiration of his passions, a direct contradiction may be useful; but when the disease is confirmed it is useless, and even dangerous, to contradict him.

It is necessary to give rest to those parts of the nervous system which, by the patient's manner of living, are in too great an activity, and to stimulate on the contrary the activity of those which remain in prolonged inaction. Thus, where sedentary life has stopped the abdominal circulation, which has so much influence on the brain through the great

sympathetic; or when intense mental tension, either by impassioned prepossession, or by forced intellectual work, has produced congestion and irritation of the brain, open air exercise, agricultural work, gymnastics, mountain exercise, etc., are very useful. Treatment by *distraction* has been much vaunted; that is by various amusements, balls, concerts, theatrical performances, change to health resorts, etc. This treatment is very bad; if there is agitation of either a lively or depressing character, it augments it. Under this treatment we have seen melancholics become maniacs; it may, however, do good during convalescence.

In general there should not be more than fifteen patients under treatment in each quarter of the asylum.

Dr. Despine discusses the theory of emotion, and the emotional treatment of insanity. He believes that the disturbing action, either for good or evil, may be attributed to an isometric change in the histologic elements of the brain determined by a disturbance of the nerve elements which preside over the nutrition of this organ, or to a change in the capillary circulation, by an action of the vaso-motor nerves, influenced by causes which have impressed the nervous system. This theory is sufficient to explain all the attacks or cures of insanity from such curious effects, as typhoid fever, scarlatina, pneumonia, injuries, loud noises, etc.

*Opium and Morphia* excite the nervous centres of the vaso-motor nerves, they give tenacity to the muscles of the small vessels, favouring their contraction and consequently increasing the capillary circulation.

The state of *somnambulism* artificially produced is one of the most powerful sedatives; it suspends cerebral activity, and is of remarkable efficacy in the treatment of obstinate hysteria.

*Camphor* is valuable in disturbance of the genital organs, especially onanism.

*Quinine* is recommended when the insanity has a periodic character, or when it shows itself in marshy districts, or when it is a sequel of dangerous and obstinate remittent fever.

*Digitalis* in twenty minim doses calms the maniacal excitement of epilepsy.

*Various theories of Insanity.*—The views of the following authorities are briefly explained and commented upon: 1. Stahl. 2. Heinroth. 3. Idelier. 4. Seuret. 5. Maine de

Biran. 6. M. Luys. 7. Maudsley. 8. Dr. Morel. 9. A. Lemoine. 10. Moran. 11. Auguste Comte. 12. Littré. 13. Dr. Despine. 14. Griesinger.

*Dr. Despine's theory.*—Madness is not a disease but a psychic state. This state in disease has its origin in a pathologic activity of the brain. But this psychic state may exist in a healthy person (he looks upon crime as a form of insanity). To have a passion roused by a pathologic state of the brain, or by a passion natural to the character, is not to be mad. That which constitutes madness, is psychic phenomena; it is the moral blindness of mind in regard to the passionate inspirations, a blindness caused in consequence of the moral feeling not enlightening the individual upon his passion, those principles of moral reason being stifled by the power of this passion, or not existing in his conscience by reason of a moral abnormality with which the individual is affected.

The word madness serves to designate two kinds of alienation. 1. When the intellectual faculties are intact, but there are moral instinctive perversions, that is to say passions. 2. When the psychic faculties are more or less powerless and incoherent, the ideas limited, when there is no attention, no reasoning and no imagination, and what remains of the moral faculties is more or less perverted.

In our review we have purposely avoided any critical remarks, though frequently tempted to do so. The book is full of suggestive thought, and has evidently been prepared with great care. There is, however, a lack of practical information, and the theories are somewhat too vague and unfeasible. We think that if Dr. Despine had limited himself to the questions of the Academy, and condensed a little more, he would have produced a more useful, though probably less imposing work.

A. H. N.

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*The Borderland of Insanity and other Allied Papers.* By ANDREW WYNTER, M.D. R. Hardwicke, 1875.

This volume consists of essays, most of which have already appeared in the "Quarterly" and "Edinburgh Reviews." Dr. Wynter has endeavoured to show that it is a mistake, excepting in the more violent cases, to send insane persons to asylums; or, at any rate, a mistake "to crowd patients together in an atmosphere sodden with insanity, where they

have to struggle through many adverse circumstances, in their progress towards mental convalescence." But where are the persons, not asylum-keepers, to be found who have suitable accommodation for them, and the skill to treat them successfully? That is the practical difficulty. Dr. Wynter thinks that the true method of cure is to surround the patient with sane minds, and that "this desideratum can best be found in the family of the physician where the influence of the family life of one of the best educated classes of the community, aided by professional tact, is by far the best mental medicine that can be applied to the patient." We should agree with him if only it were possible to find the right physician. But, according to our experience, the medical men who are anxious to receive an insane person into their houses are too often needy men, who think chiefly of increasing their income thereby, without thinking sufficiently of the character of the accommodation which they have to offer, and of the responsibilities which they incur. They want a "good patient," that is, a patient who shall not give them much trouble, and shall pay well, and they seem to imagine that their professional character entitles them to this easy way of making an income which they cannot make in any other way. They are apt to forget too that they have responsibilities to the patient, who is too often left entirely to the care and company of an attendant; the medical treatment consisting in dosing him with hydrate of chloral in the most pernicious fashion. In point of fact the supposed advantage of such medical supervision is sometimes an unmixed evil; for while it does not, unfortunately, imply, in most cases, any better knowledge of insanity than a non-medical person has, it may imply a self-sufficiency which leads to an ignorant and reckless administration of injurious drugs. Some of the most mismanaged cases of insanity which we have met with have been in the houses of medical men; and on the whole we should say that insane patients in private houses are better taken care of in the houses of non-medical persons who cannot make a professional qualification an excuse to themselves or others for neglect of them. Given, however, the conscientious and competent physician, and we agree with what Dr. Wynter has said.

Dr. Wynter's first chapter is on the "Borderland of Insanity," and it will no doubt be highly interesting to the general reader, for it presents some curious and novel information in a pleasant style. His second chapter, on "Non-

Restraint in the Treatment of the Insane," contains an instructive account of the development and progress of this great reform, and an earnest protest against the complacent doctrine that we have reached a point at which we can afford to "rest and be thankful." Dr. Wynter thinks our present monstrous asylums to be little better than monstrous iniquities. Other chapters treat of the training of imbecile children, of the eccentricities of the mentally affected, of brain enigmas, of hallucinations and dreams, and of the suicidal act. The matter in these chapters will be familiar enough to our readers, but we have no doubt that the public will appreciate it, and that Dr. Wynter's volume will be favourably received.

### PART III.—PSYCHOLOGICAL RETROSPECT.

*The Editors regret that, on account of the great pressure on their space, they are compelled to defer the Retrospect until January.*

### PART IV.—NOTES AND NEWS.

#### ANNUAL GENERAL MEETING OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

The Council met at the King's and Queen's College of Physicians, Dublin, at 10.30 a.m., on Wednesday, August 11th, Dr. Rogers, President of the Association, in the chair.

#### THE MORNING MEETING

was held in the College Hall, at eleven a.m., and the Afternoon Meeting at Two p.m., on Wednesday, August 11th.

#### MEMBERS AND VISITORS PRESENT.

Dr. Rogers, President; Dr. Duncan, President-elect. Dr. Lalor, Dr. Maudsley, Dr. Hack Tuke, Dr. Paul, Dr. Clouston, Dr. Murray Lindsay, Dr. McKinstrey, Dr. Garner, Dr. Day Lovell, Dr. Norton Manning, Dr. McDowall, Dr. Major, Dr. Courtenay, Dr. John Eustace, Dr. A. H. Corley, Dr. Marcus Eustace, Dr. T. Fitzpatrick, Dr. H. H. Stewart, Dr. Patton, Dr. Ashe, Dr. James Stewart (Bristol), Dr. Barry Delaney, Dr. Leeper, Dr. Lawless, Dr. Minchin, Dr. A. Stewart Merrick, Dr. Joseph Petit, Dr. Pim, Dr. N. B. Duncan, Dr. MacCabe, Dr. W. Rhys Williams.

Dr. ROGERS, the President, took the chair.

The minutes of the last meeting having been read and confirmed,

The PRESIDENT said that in resigning the Chair he now occupied to his successor, he had, in the first place, to thank the Members of the Association very heartily for the distinguished honour they had conferred on him by electing him to that post, and next for the great kindness and consideration which they had evinced towards him. In making way for his worthy successor he had to express his pleasure at being succeeded by one who so worthily represented the profession as the President of the College of Physicians of Ireland, and who would,

no doubt, equally well represent that Association and reflect equal lustre upon it (applause).

Dr. ROGERS then vacated the chair, which was taken by

Dr. DUNCAN, who said he felt very much obliged for the honour they had been good enough to confer upon him last year in his absence, by electing him to that high position. He should not now trouble them with any observations, as he should take up a considerable portion of their time in the afternoon. He would, however, read a letter which he had received on the previous day from Dr. Harrington Tuke, and which the writer wished to be inserted in the minutes.

The President then read a letter from Dr. Harrington Tuke, expressing his great regret at not being able to be present in Dublin. Dr. Tuke had many family associations connecting him with Ireland and the Irish, and he had much hoped to have been able to have joined in a meeting that promised to be so successful under Dr. Duncan's presidency.

Dr. RHYS WILLIAMS (the General Secretary) said the next business was to decide on the place of meeting for the next year. The general rule was that when a meeting had been held in the provinces, the next meeting was held in London, and according to that rule London would be the place for their next annual meeting.

Dr. H. STEWART moved, and Dr. J. MURRAY LINDSAY seconded, a resolution to the effect that the next meeting of the Association be held in London.

The motion was adopted.

#### ELECTION OF OFFICERS.

Dr. CLOUSTON said—I have great pleasure in proposing as the President-elect a gentleman—an English County Asylum Superintendent—who is well known to all of us on the other side of the water. He was, to begin with, a very distinguished graduate of the London University, which, as you are all aware, implies very high medical qualifications. He was then appointed to the Warwick County Asylum, and for twenty-five years has been the honoured Physician Superintendent of that Asylum. During all that time he has conducted its affairs to the satisfaction of his own committee and to the satisfaction of the profession, and especially of the members of this Association. We now begin to look upon him as a father in this department of the profession. He is taken up largely with his medical and administrative duties, but he has not neglected this Association or its meetings, of which he has been a constant attendant. I think Dr. Parsey—for that is the gentleman I have the honour to propose—will commend himself to the judgment of all the members present as a fitting President of the Medico-Psychological Association (hear, hear). He has been so typical, so characteristic an English Asylum Superintendent, that during the whole long course of his administration in Warwick Asylum he has never been before the profession in any unfavourable light whatever. I think he will do honour to this Association, and his period of service now drawing as it were to a close, I think it becomes us to show him this honour before his probable retirement at no very distant date. I have, therefore, the honour to propose that Dr. Parsey, of the Warwick County Asylum, be appointed our President-elect (applause).

Dr. H. STEWART, as one of the oldest members of that Association, had great pleasure in seconding the nomination of Dr. Parsey.

Dr. LINDSAY said he had come prepared to propose another candidate, but the discussion which had taken place at the meeting of the Council had convinced him of the desirability of not submitting the name of that gentleman for their consideration on the present occasion. He therefore withdrew the name of Dr. Browne, whom he had intended to propose, in favour of the very excellent gentleman proposed by Dr. Clouston, so that the vote might be unanimous, and therefore enhance the value of the compliment to Dr. Parsey (applause).

Dr. LALOR thought it was due to Dr. Lindsay to express to him the feeling which

had already been expressed in Council, of thanks for the very handsome manner in which he had acted on that occasion. It was the feeling of the Council, and he doubted not it would be the feeling of that meeting, that the greatest credit was due to him as the friend of Dr. Crichton Browne, for the liberal spirit which he had displayed; and he had no doubt his action in withdrawing Dr. Browne's name would give that gentleman an additional claim on the Association for election on the next suitable occasion (hear, hear).

The motion for the election of Dr. Parsey was then put and carried unanimously.

Dr. COURTENAY, Limerick, then proposed that Dr. Rhys Williams be re-elected as Hon. General Secretary.

Dr. LALOR had great pleasure in seconding the motion. He had the honor of voting for him at his first election, and after a trial of him he was anxious to retain his valuable services as their General Secretary.

The motion was put and carried unanimously.

Dr. ROGERS proposed, and Dr. D. Hack Tuke seconded, the re-election of Dr. MacCabe as Honorary Secretary for Ireland. Motion adopted.

On the motion of Dr. ASHE, seconded by Dr. STEWART, Dr. F. Skae was re-elected Honorary Secretary for Scotland.

Dr. LINDSAY begged to propose the re-election of Dr. Paul as Treasurer of the Association. Dr. Paul's merits were too well known to them all to render it necessary that he should say anything in support of this proposal.

Dr. MCKINSTRY seconded the motion, which was unanimously adopted.

The SECRETARY said the next business was the election of Editors of the "Journal of Mental Science."

Dr. STEWART had great pleasure in moving that the present Editors of their valuable Journal, Dr. Maudsley and Dr. Clouston, be re-elected.

Dr. HACK TUKE seconded the motion, which was carried unanimously.

On the motion of Dr. ROGERS, seconded by Dr. MACCABE, Dr. Harrington Tuke was appointed as one of the Auditors of the Association.

Dr. LINDSAY proposed, and Dr. MAJOR seconded, the election of Dr. Courtenay, of Limerick, as one of the members of the Council.

After a brief conversation, the SECRETARY announced the names of the following gentlemen as having been proposed as members of the Council, viz.:—Drs. Yellowlees, Rayner, Garner, Courtenay, and Ashe.

Dr. LALOR suggested that the two English gentlemen, Drs. Yellowlees and Rayner, be elected unanimously, and that they should ballot only for the two Irish members of Council. The suggestion, however, was not adopted, and a ballot was taken for the four members. Drs. Eustace and MacCabe were appointed scrutineers, and announced the result to be the election of Drs. Yellowlees, Rayner, Garner, and Courtenay.

#### VOTE OF SYMPATHY TO DR. R. STEWART'S FAMILY.

Dr. LALOR said he felt highly honoured at being afforded the opportunity of proposing a resolution to the Association expressive of the unanimous feeling, he thought of all its members—he was sure of those present, and he thought he could speak for those absent too—of deep regret which they entertained at the loss of their late lamented member, Dr. Robert Stewart, the senior member of the Association in Ireland. He regretted that he had not had more time to prepare the resolution which he was about to submit to the meeting. He felt no regret, however, at not having a longer time to prepare any remarks, because he thought occasions of this sort were very often best met by some very brief observations, and especially was that the case in respect to the late Dr. Robert Stewart, whose deep interest in that Association, and whose unpaid, valuable, and painstaking services had been so long the object of favourable remark by all the members of the Association. He should, therefore, content himself with moving the following resolution:—"That the expression of the deep sympathy of the Medico-Psychological Association be conveyed by the General Secretary to the family of the late Dr. Robert Stewart, whose death since the last meeting



# THE MEDICO-PSYCHOLOGICAL ASSOCIATION.



*The Treasurer's Annual Balance Sheet, 1874-5.*

RECEIPTS.		EXPENDITURE.	
	£ s. d.		£ s. d.
To Balance Cash in Hand	213 6 0	By Annual Meeting	18 17 0
To Subscriptions received	174 6 0	By Editorial Expenses	6 6 0
By Secretary for Ireland	31 10 0	Printing, publishing, engraving, and advertising Journal	257 7 11
By Secretary for Scotland	54 12 0		
By Sale of Journal, Messrs. Churchill	98 16 0	Sundries—Advertisements	4 7 7
		By Printing and expenses of Quarterly Meetings	5 5 0
		By Treasurer	0 17 4
		By Secretary for Ireland	8 10 0
		By Secretary for Scotland	5 5 0
		By General Secretary	265 14 2
		By Balance in Treasurer's hands	£572 10 0
	£572 10 0		

Examined and found correct,

JOSEPH LALOR, M.D., &c.

J. H. PAUL,  
Treasurer.

KING'S AND QUEEN'S COLLEGE OF PHYSICIANS, IRELAND, August 11, 1874.

has caused the loss of one so long and honourably connected with the Association as the honorary secretary for Ireland, and one of its most valued members."

Dr. PAUL—I am happy, as a very old member of the Association, to second the resolution moved by Dr. Lalor. I had the pleasure of knowing him for twenty five years, and I can bear testimony to his high character, and to his great usefulness as a member of the Association.

The resolution was put and carried unanimously.

#### STATEMENT OF ACCOUNTS.

The TREASURER (Dr. PAUL) then made his annual statement. He had to congratulate them on the favourable condition of their balance-sheet, and also to say how much of that was due to the sale of their Journal. No less a sum than £98 16s. had been realized by the sale, and there was now in his hands a balance of £265 14s. 2d. The account had been duly audited by Dr. Lalor. He thought the time had now arrived when some consideration should be given to the appropriation of a portion of their funds to the advancement of medico-psychological science (hear, hear).

Dr. CLOUSTON moved that the accounts of their Treasurer be adopted, and the thanks of the Association voted to Dr. Paul.

Dr. PATTON seconded the motion, which was adopted.

#### NEW MEMBERS.

The SECRETARY said the name of the Rev. Dr. Haughton, of Dublin, had been suggested as an honorary member of the Association, but it was necessary that one month's notice should be given, and that his name should appear in the *agenda* paper, and as this had not been done he could not now be elected. His name would be brought forward at the next meeting, when, no doubt, they would have the pleasure of electing him an honorary member. The Secretary then read the following list of names for election as members, they all having been proposed and seconded by members of the Association :

Atkins, Ringrose, M.A., M.D. Queen's Univ., Ire., Assist. Resident Med. Superintendent, District Lunatic Asylum, Cork.

Brown, William James, M.B., Assist. Med. Officer, Borough Asylum, Newcastle-on-Tyne.

Corley, Anthony H., M.D. Queen's Univ., Ire., F.R.C.S.I., 30, Lower Baggot Street, Dublin.

Delany, Barry, M.D. Queen's Univ., Ire., Med. Superintendent, District Asylum, Kilkenny.

Duckett, William Shaw, M.D. Glasgow, 44, Upper Mount Street, Dublin.

Eustace, Marcus, F.K.L.C.P. Ire., Highfield, Drumcondra, Ireland.

Grabham, George, M.D. Lond., Res. Physician, Earlswood Asylum, Surrey.

Harbinson, Alexander, M.D. Ire., M.R.C.S. Eng., Assist. Med. Officer, County Asylum, Lancaster.

Hatchell, Joseph H., L.K.L.C.P. Ire., Resident Med. Superintendent, District Asylum, Maryborough, Ireland.

Inglis, Thomas, L.R.C.P. Edin., 4, North Merchiston Place, Edinburgh.

McDowall, M.B. Edin., Assist. Med. Officer, South Yorkshire Asylum, Wadsley.

Newington, Alexander, M.B. Camb., M.R.C.S. Eng., Ridgeway, Ticehurst, Sussex.

Philipson, George Hare, M.D. and M.A. Cantab., F.R.C.P. Lond., 7, Eldon Square, Newcastle-on-Tyne.

Seymour, Francis, M.R.C.S. Eng., L.S.A., Assist. Med. Officer, Thorpe Asylum, Norwich.

Smith, Patrick, M.D., Resident Physician, Yarra Bend Asylum, Sydney.

Spence, James B., M.D. Ire., Assist. Med. Officer, Earlswood Asylum, Surrey.

Wenholm, James, M.D., Dunse, N.B.

Winslow, Henry Forbes, M.D. Lond., M.R.C.P. Lond., Sussex House, Hammer-smith, Middlesex.

The list was unanimously agreed to.

Dr. ROGERS—The name of the Rev. Dr. Haughton has been mentioned as an honorary member, but it appears that according to our rules he is not eligible for election at the present time unless by some special resolution. I believe it is quite open to me or any other member to propose that the standing orders be suspended for the time with a view to enable us, as we are here in the capital of Ireland, to elect Dr. Haughton as an honorary member. He is well known as one of the shining lights of the British Medical Association. Everyone who attends those meetings must be familiar with his name and his eloquence, and I think while we are in Ireland it would be better to elect him, as the compliment will be greater than if we deferred it for another year. I therefore propose that the standing orders be suspended in order to enable us to elect Dr. Haughton as an honorary member of the Association.

Dr. STEWART seconded the resolution, which having been agreed to,

Dr. ROGERS then proposed, and Dr. LINDSAY seconded, that the Rev. Dr. Haughton, M.D., D.C.L., F.R.S., be elected an honorary member of the Association. The motion was carried unanimously.

#### THE W. AND S. TUKE PRIZE.

The SECRETARY said that last year a Committee was appointed to carry out the W. & S. Tuke prize, and it was decided that a prize should be given, and the date of June 30th, 1876, was fixed on as the time when the papers should be sent in. Owing to illness on his part, or inadvertence, or perhaps both combined, the foreign members had not been so well acquainted with the conditions as they ought to have been, and especially in America they had had no notice of the subject. Therefore, Dr. Hack Tuke proposed that the time for sending in the papers should be extended to March 31st, 1877, and if any one preferred that the extension of time should be to June the 30th, he said he would have no objection, and that he did not think that an additional year would be too much time to allow.

Dr. D. HACK TUKE said that he had had no expectation of being able to attend the present meeting, and therefore he had written to Dr. Williams the letter which he had brought under their attention. He had received a letter from Dr. Gray, Editor of the "American Journal of Insanity", who said he had no notice of the subject. Therefore, he (Dr. Tuke) thought it only reasonable that the time should be extended either for nine months or a year, and on the whole he preferred the extension of the time for a year, that is to June 30th, 1877. The subject of the prize had been announced, viz.: The best essay illustrative of the *Ætiology of Insanity, with Microscopic Preparations*. It appeared that the German and French journals had not received any information about the matter until very recently. It would only be courtesy to them to extend the period from the time originally appointed, and on the whole he thought the extension should be for one year.

Dr. MAUDSLEY—That being the feeling of Dr. Hack Tuke, whose family have given this valuable prize, we have but one course to adopt, and that is to accede to his suggestion. This is a prize of 100 guineas, a valuable prize for what we hope will be a valuable series of essays. I could not help feeling that the time allowed was a little too short considering that we were anxious to enlist foreign as well as British contributors in this competition, and now that Dr. Tuke has suggested an extension of time there is put one course for us to pursue, and that is to extend the time to the 30th of June, 1877, as he has proposed. I have, therefore, great pleasure in moving a resolution to that effect.

The resolution was carried.

Dr. CLOUSTON said as this subject had been brought forward, and as the association was in funds at present, he wished to throw out a suggestion with respect to the propriety of instituting a second prize. They all hoped that for this valuable prize offered by Dr. Tuke there would be more than one competitor, and often there was not much difference in point of merit between the first and second. It was a question for the Association whether they would

not devote ten or twenty guineas as a prize for the second best essay. He should like to know if Dr. Hack Tuke concurred in that suggestion.

The PRESIDENT thought a prize of 20 guineas too little. He thought that if they gave a second prize at all it should be at least 30 guineas or even 50 guineas.

Dr. CLOUSTON said that although their funds had increased it should be borne in mind that their Journal was becoming more expensive. For plates alone they had spent something like £15 last number, and they all knew that the illustrations of scientific papers was a valuable feature, and that it was very costly. He spoke with deference to his co-Editor, Dr. Maudsley, when he said that they had been very economical in the conduct of the Journal, and that they could with advantage spend more upon it than they had been in the habit of doing. He therefore thought if they decided on instituting a second prize that 20 guineas or at most thirty would be a sufficient sum to allocate for that purpose.

Dr. MAUDSLEY said that this prize, entitled "The William and Samuel Tuke Prize," was given by the descendants of those gentlemen to do honour to their memory; and it was a question for Dr. Hack Tuke whether it was desirable under the circumstances that the Association should take any part in it in the way of giving a second prize. At the time Dr. Hack Tuke was good enough to propose this prize, there was a resolution on the agenda paper that a prize of thirty guineas should be given by the Association, but that was postponed for a time in consequence of this very generous offer.

Dr. D. HACK TUKE said he had no feeling of that kind at all, and Dr. Clouston's suggestion would meet with his approval unless there was any other object to which the funds now in hand might be better appropriated. It struck him that perhaps the Association might form the nucleus of a library in London, of works connected with their special branch of the profession. A library of works on Psychological Medicine was much wanted, especially as regards foreign works, and he thought the time had come when they might form the nucleus of such a library, for the reception of which the Royal College of Physicians would probably lend them sufficient room. He merely threw out the suggestion as one worthy of consideration, and not with the view of setting aside Dr. Clouston's proposal on any personal grounds.

Dr. MAUDSLEY—Propose the appointment of a committee to consider the subject, and to report to the Association next year.

Dr. HACK TUKE—Then I propose that a portion of our funds be applied to the formation of a library of works bearing on Psychological Medicine, and that a committee be appointed to report on the subject.

Dr. J. EUSTACE—Might I make a suggestion with regard to this surplus fund, which seems rather a trouble to us? Would it not be well to bear in mind that our funds might be usefully employed in passing Acts of Parliament bearing on medico-legal questions? I think that this Association ought to take a more active part in these matters than it has done hitherto. It seems a hardship that these matters should be left to individuals, and I believe that legal changes would be more efficiently carried out if the opinion of this Association was had upon them.

In the course of a brief conversation, it was suggested that instead of pointing out any specific application of the funds, the resolution should be confined to the appointment of a committee to consider the best means of advancing Medico-Psychology.

Dr. J. STEWART (Bristol) said it was very magnanimous on the part of Dr. Tuke to bring this subject forward, inasmuch as it was the younger members of the Association who would chiefly profit by the library which he proposed to form. At the same time he thought it would not be well that they should vote on that resolution without some notice being taken of the remarks of Dr. Eustace; for it would be a question which must crop up some time, if that Association was to contribute practically to the advancement of psychological medicine, whether they might not do something for the promotion of mental science, such as the

British Medical Association was doing for the profession at large. It would be premature on that occasion to put the idea of Dr. Eustace in the form of a resolution as an amendment to that of Dr. Hack Tuke, but it would be well if the members of the Association bore it in mind. He hoped some day they would see the Medico-Psychological Society taking the same stand on behalf of Mental Science as the British Medical Association had done in regard to the profession generally. He had much pleasure in supporting Dr. Hack Tuke's proposal, by which the younger members of the Association would be especially benefitted.

Dr. J. EUSTACE—I do not mean to interfere with the resolution. On the contrary, I cordially support it, and I think my idea is included in it.

A resolution moved by Dr. Hack Tuke, and seconded by Dr. Clouston, was then unanimously passed as follows:—"That a Committee of this Association be appointed to take into consideration the question of devoting a portion of the funds of the Association for the advancement of Medico-Psychology, and to report to the next annual meeting." The members of the Committee named were Dr. Duncan (President), Dr. Maudsley, Dr. Clouston, Dr. Lalor, Dr. Crichton Browne, Dr. Paul, and Dr. Hack Tuke.

#### THE CLINICAL TEACHING AND STUDY OF INSANITY.

Dr. CLOUSTON—You are all aware that the teaching of the subject of insanity must be an extremely important thing for our branch of the profession, and also for the profession at large. The reason I make that remark at present is, that a petition to the various examining boards of the kingdom was drawn up and signed by all the Lecturers on Insanity in the kingdom, and the petition was to this effect, that three months' clinical study in an asylum should be allowed to count instead of three months' hospital course for those students who wished to study mental diseases in a lunatic asylum. The reasons for asking this were stated in the petition, and although only a short time has elapsed, yet most favourable replies have been received from several of the examining bodies. The Royal College of Physicians in London, as representing the oldest and most distinguished body of all the corporations, has acceded to our request. This was founded on a resolution in the statutes at present existing of the University of London, which provides that in the case of any student who takes three months in an asylum it counts as three months in an hospital. At present the subject is under the consideration of several of the examining boards. Now, we as members of the Medico-Psychological Association, and many of us experienced in regard to asylum matters, knowing the way in which insanity is studied, as well as the general state of knowledge on the subject on the part of our professional brethren, and feeling the very great defects that exist in the state of medical education on that subject, believe that it would strengthen the hands of those lecturers, and of those who are interested in the question, if we passed a general resolution to the effect that it would advance the study of insanity, and of nervous diseases, if the proposal made in that petition were acceded to, or if any other direct mode of stimulating students to study the subject were adopted, such as the institution of a special examination and certificate in mental and nervous diseases, or better still, making their study compulsory on all students. Comparatively few students might at first take advantage of it, but for those few who desired to do so, it would be a great matter that they should be permitted to count the three months spent in clinical study in the asylum as part of their medical course. I think the subject commends itself so clearly to all of us that if a resolution of this Association were likely to advance the matter there will be no hesitation in agreeing to it. I will therefore propose—"That, in the opinion of this Association, the Study and Treatment of Insanity, and other Diseases of the Nervous System would be advanced, if a three months' course of clinical instruction in an Asylum for the Insane were accepted in lieu of three months' attendance at a General Hospital, or if any other direct mode of encouraging and stimulating students to acquire a

knowledge of this branch of Medicine were adopted by the various Examining Boards of the United Kingdom."

The SECRETARY (Dr. Rhys Williams) had much pleasure in seconding the resolution so ably proposed by Dr Clouston. He was quite certain that such a resolution would strengthen their hands in getting the principle for which they contended carried out. He found in London that when a three months' course in an asylum was allowed to count it increased the number of his students, and if the rule were made general it would increase still more the number of those who would study mental disease.

Dr. H. STEWART had great pleasure in supporting the resolution. It was a melancholy thing to find intelligent men so utterly ignorant of insanity and the nervous diseases as many medical practitioners were, and it was important that they should study the subject, because it would secure that they would become acquainted with metaphysical studies.

Dr. ISAAC ASHE—The only objection I have to the resolution is that it does not go far enough. Instead of making the study of mental disease in an asylum optional, I should make it imperative; and for this reason, that it is not only desirable to train up a number of young men competent to become assistants in asylums; but I think it is desirable that all who engage in practice throughout the country should be competent to deal with the cases of insanity that present themselves in an early stage. The general practitioner is often called on to see patients before they become insane at all, when they are suffering only from aberration of the nervous system threatening insanity, and I think that every medical man should be competent to understand such cases, and to treat them before they develop into cases of insanity and pass into the hands of a specialist. I have myself found very great difficulty in the management of such cases which were constantly occurring, and I think it desirable, therefore, that every practitioner should study mental disease and be competent to deal with such cases as I have referred to.

Dr. LALOR—I must express my entire concurrence in the petition that was adopted by the teachers of mental science of the different schools, and my sincere hope that it will have its due weight with the different examining bodies throughout the kingdom. I may mention, so far as Ireland is concerned, as an illustration of the necessity of attendance on the practice of an hospital for the insane being recognised by the Examining Boards, the case of the Asylum over which I am placed. Previous to my appointment as the Resident Superintendent of the Richmond Asylum there were some few pupils attending the clinical practice of that Hospital, and for some years after I became resident Superintendent they continued to attend. I regret to say that although I have made various efforts to induce some pupils to attend as students, I have utterly failed in inducing them to do so, and the cause I believe to be wholly and solely that the time and the money of Irish medical students are so fully pre-occupied that they cannot possibly spare any time to devote to attendance on lunatic asylums where attendance will be of no practical use to them as to the attainment of a degree or additional honour in coming up for examination. The pupils who used to attend the Richmond Lunatic Asylum were persons preparing for medical service in the Army or Navy; and at that time three months' attendance at a lunatic asylum was required by the Army and Navy Medical Boards. After I was some years at the Richmond Asylum a new rule was made that after a person had been raised to the rank of Surgeon he should attend one of the Navy or Army Hospitals. Since this I have found it impossible to get pupils. I may also say that by Act of Parliament the Richmond Hospital and the Cork Asylum, and the Central Asylum at Dundrum, are legally recognized as schools of medical psychology. It might be said that the non-attendance of pupils at the Richmond Asylum was owing to my want of ability; but there can be no doubt that the able man who presides over the Cork Asylum and our worthy Secretary, the Superintendent of the Dundrum Asylum, who have been most anxious to form classes at their respective asylums, have been equally unsuccessful with me and others who have made efforts in the same direction.

Dr. D. HACK TUKE—Does Dr. Clouston intend to incorporate into his resolution that attendance at an Asylum shall be made compulsory?

Dr. CLOUSTON—I think it is better to say nothing about making the attendance compulsory at present. Let us first endeavour to get in the thin edge of the wedge. When we succeed in doing that we may then try to drive it in a little further.

Dr. HACK TUKE—I am strongly in favour of the resolution, and hope it will pass unanimously.

Dr. McDOWALL—I would rather approve of making the attendance compulsory, for permissive legislation seems to be rather unsuccessful.

The PRESIDENT—I intended to make a few observations on this subject in my address, but perhaps hearing the discussion now may save us from having any discussion afterwards. The matter was brought before our College, and while admitting the importance of it they don't see their way to the substitution of a course of three months in an asylum in lieu of clinical study in an ordinary hospital. The time given to the latter is already little enough. The College would prefer going in for a compulsory three months' course in an asylum (hear, hear).

The resolution was then put and carried unanimously.

The meeting then adjourned for luncheon, which had been provided by the Irish Reception Committee, and was laid out in the library of the College.

#### THE AFTERNOON MEETING.

Was held at two o'clock.

#### PRESIDENT'S ADDRESS.

(See *Original Articles*, p. 313).

Dr. ROGERS, ex-President, rose for the purpose of proposing a vote of thanks to the President for his very able and interesting address. Without entering into any details or criticising that address at present, he would content himself by proposing that a vote of thanks be passed to the President by acclamation (applause).

Dr. LALOR—The very high honour has been conferred upon me of seconding that vote of thanks which has been received with such acclamation as to show that it is quite unnecessary for me to advance any argument in its support. The very high scientific value of the address of our President—and I may say I do not think I have heard or read any address that has exceeded it in value—the high scientific and psychological value of the remarks made by him will be acknowledged by all present. The equal value of the social positions that he has advanced and brought before us for investigation and inquiry (whether we agree with all his views or not) cannot be doubted, but there underlies the whole of his address one remarkable feature, which is what I expected from my long knowledge of our worthy President, and I am sure there is not one Irish member present who has had the advantage of his acquaintance who will not agree with me—and that is the exceedingly high moral tone he has taken from the beginning to the end of his address (hear, hear). I need not tell our English friends that Ireland is peculiarly a land of religious and political differences, and no one knows better than our worthy President that all his countrymen do not take the same views in religion and politics that he does, but every one who knows him, either personally or by reputation, knows there is not an opinion or sentiment he holds that is not the result of deep moral conviction, and I believe he would sooner sacrifice life itself than surrender the assertion of any one of them. To those who know him in Ireland, and who have had the advantage of personal intercourse with our worthy President, the high moral tone of feeling that underlies the whole of his address is what we all expected (hear, hear). Among the vulgar prejudices which have come down to us from antiquity with reference to insanity there is one that association with the insane is corrupting and demoralizing. Need I point to a higher example of the unsound nature of that conclusion than to our President! We have in him one who from

early infancy has been associated with the insane at his father's table. Where is the deteriorating influence of that association manifested in him? Could there be among the sages and the philosophers who have studied human nature in their closets, and have never mixed with or been brought under the influence of any deteriorating causes—could there be found even in such men a higher moral tone or higher feeling than our President has evinced (hear, hear). I have great pleasure in seconding the resolution proposed by Dr. Rogers (applause).

The PRESIDENT thanked the meeting for their kindness, and said he had no doubt there were some points open to criticism in his address, but he thought their time would be better spent in hearing the papers which were to be read than in a desultory conversation on his address, which could be read and studied and made the subject of literary comment in their Journal (hear, hear).

#### THE POSITION OF MEDICAL SUPERINTENDENTS OF ASYLUMS IN IRELAND.

Dr. JAMES STEWART read a paper on "Obstacles to the Advancement in Ireland of Psychological Medicine," and concluded by proposing the following resolution:—

"That in the opinion of this Association the Resident Medical Superintendents of the Irish District Asylums are unfavourably placed for availing themselves of the clinical opportunities presented by the public institutions for the insane in Ireland.

"That their disadvantageous position, in this respect, is due chiefly to the following facts:—

"(1.) The majority of Irish district asylums—eighteen out of twenty-two—are only provided with one resident medical officer.

"(2.) The Superintendents of the district asylums are overburdened with non-professional duties unknown in the similar establishments of England and Scotland.

"That a deputation of this Association wait on the Inspectors of Irish Asylums to press on their attention the importance of the foregoing resolution."

Dr. J. MURRAY LINDSAY said he rose with some amount of diffidence to second the resolution, but he thought it right to do so rather than that this proposition should be allowed to fall to the ground without a seconder. He should rather that some Irish member better acquainted than he was with the system should have risen to support it, but he quite understood the reason of their unwillingness to do so. His knowledge of Irish asylums was limited, but he had visited many of them, and he had read the Irish reports, and those to which Dr. Stewart had pointed. He must say it had struck him in a very remarkable manner, that the Irish asylums should be so very different as regards their medical staff from similar institutions in England and Scotland, and his surprise was all the greater that no step was taken either by the Superintendents themselves, or by the Inspectors, to increase the medical staff in those institutions. The necessity and importance of a proper medical staff in lunatic asylums could not be questioned. It was a great mistake to have but one medical officer in an asylum. It was absurd to expect that one man could conduct an institution containing 400 or 500 inmates single-handed. One or other of two things must result—the Superintendent will either be over-worked, or the work will be inefficiently done. That one man could conduct the business of such an institution, and keep up the records, and attend to the patients, he did not believe. He had never seen the man who was capable of doing such work continuously. He was glad to say this point was strongly felt in England, and now whenever the medical superintendent goes away for his annual holiday, so convinced is he of the desirability of keeping up the medical staff, even for the few weeks of his absence, that he asks permission, and obtains it, to appoint an additional medical officer for that time. Just before leaving on the present occasion, he (Dr. Lindsay) impressed on his committee the importance of keeping up the staff, and succeeded in procuring the attendance of a young medical

man during his absence. Even in small asylums in Scotland similar provision was made. At the Fife asylum, containing less than 300 patients, the medical officer got an assistant during his absence. At the Durham county asylum, where there were two medical officers, this was also done, and it was done likewise at Chester, and also he believed at Hanwell. It would be giving a helping hand to the Irish asylums, if that Association should express its feeling of the necessity for having a competent and efficient medical staff for their institutions. He had no knowledge, personally, how the medical records of the Irish asylums were kept, but he thought, if he came to examine them, they would find that those records were not kept in the same regular and detailed way as in England and Scotland. Indeed he did not see how they could be so kept with their inadequate medical staffs. He hoped some Irish Superintendent would stand up and enlighten them on that point.

Dr. ASHE said it was not from any want of due appreciation of the importance of Dr. Stewart's paper that Irishmen did not at once rise to express their sense of his efforts on their behalf. It was from a feeling that they were powerless in the matter, and that the battle must be fought for them by the Association. The management of the Irish asylums, in such points as this, was entirely under the control of the Inspectors. They recently suggested the appointment of medical assistants, but in consequence of the regulations on the subject being permissive, it had been left to the boards of governors to make the appointments; and it was now clear that until the law was made imperative no such appointment would be made. The Irish medical superintendents felt that the care they had to give to other matters, which were not strictly speaking within their province as physicians, did prevent them keeping their records properly. He was afraid that the records would compare very badly with those of English asylums, and although they endeavoured to take the notes of cases, it was more for their private advantage than for the public. They had many things to attend to that would excite the laughter of English superintendents. The cultivation of their farms for instance was a matter that engaged a portion of their time and attention. One of the things he had to mention in his report was that he had just been successful in negotiating the private sale of the barley on the farm, there having been no attendance at the public auction (a laugh). Certainly if that association could succeed in obtaining for the Irish superintendents some more efficient assistance in managing the routine cases, and the many details of administration, they would confer a great benefit upon them, and enable them to redeem themselves from the reproach to which they are now open of not contributing more frequently to the literature of mental science (hear, hear).

Dr. MCKINSTRY said the disadvantages under which the Irish Superintendents laboured had grown out of a bad original system. When the Irish Institutions were first established they were put under the superintendence of laymen, who took all these duties upon them, and as the system was changed these duties devolved by degrees on the Medical Superintendents. That might account, to some extent, for the anomalous position they found themselves in as being not only regular medical superintendents, but book-keepers and clerks. All these matters must go through their hands, and if mistakes were made they were responsible for them.

Dr. LALOR—The remarks of Dr. Stewart and my two valued colleagues, make it quite unnecessary that I should go into any reasons in support of Dr. Stewart's resolution, which I think is entirely in accordance with the views of the resident Medical Superintendents in Ireland, both with regard to the great importance of this Association giving us their kind assistance in this matter, and that the improvement of the Irish system is rather to be expected from the action of this Association than from the efforts of the Irish Medical Superintendents themselves. I may mention with reference to the old code of rules and regulations, which, as Dr. McKinstry says, led to the present vicious system—the improvement in these rules was owing to the action this Association took in 1861, when I was President of this Association; that being the first and

this the second meeting of the Association in Dublin. On that occasion the subject was taken in hand by the Association, and a deputation was appointed, upon which were Dr. Gilchrist and other influential members, to wait on the Chief Secretary for Ireland, Sir Robert Peel, with a view to obtain an improvement on the old rules. Although the present rules are very defective, still they are a vast improvement on the rules that preceded them, and that improvement is entirely owing to the deputation that waited on Sir Robert Peel, and urged upon him the desirability of revising the rules. Sir Robert Peel took the matter in hand, and although he did not carry it out himself, he left to his successor the rules which he thought should be carried out; and that led to the adoption of the present rules, which are a decided improvement on the old ones. With regard to the deputation waiting on the Lord Lieutenant, there are some practical difficulties, but if the resolution be forwarded to the Chief Secretary, requesting his favourable attention to the subject, it may answer all purposes.

Dr. CLOUSTON—And it might be well to forward a copy of it to every individual Governor of an Asylum in Ireland.

Dr. LALOR—The Governors have nothing to do with the making of the rules. The Lord Lieutenant has to make them, and the Governors are the persons who have to carry them out.

Dr. ASHE—On one point the Governors have a discretionary power, they may appoint a resident pupil at the asylum. Permission is given to the Governors to appoint him, and it rests with them to do so or not.

Dr. CLOUSTON—There is one point which deserves to be considered. There is a series of returns that it is the duty of the Irish Medical Superintendents to fill up; and in England and Scotland we have a series of tables to fill, the tables of the Medico-Psychological Association, which were carefully got up by the most experienced men in the Association, and which are generally carefully filled up in England and Scotland. It is quite out of the question that an Irish Medical Superintendent should be first required to get up his official tables and then the tables of the Medico-Psychological Association. If the Inspectors who have jurisdiction in these matters could be prevailed on to do what the Commissioners of Lunacy have done, viz., to incorporate these tables with their own, then we should have one general system of statistics of lunacy for the entire of the United Kingdom (hear, hear).

Dr. ASHE—We have to get up judicial statistics, and then a different set of tables, and extracts from our books and certain entries applicable to those who are entered as “dangerous lunatics.”

Dr. JAMES STEWART—The term “dangerous lunatic” in Ireland applies to a large number of the inhabitants (loud laughter)—of the inhabitants of our asylums, inasmuch as the friends of a lunatic take very very good care to save themselves trouble by making a declaration before a magistrate, and the unfortunate individual is sent as a criminal to an asylum.

The PRESIDENT—After what I have said in my address, you may be quite satisfied that I go with your feelings in this matter. At the same time I don't think you are taking the very best method of bringing this matter before the Government. The Government don't care a straw about your scientific objects. They want to get a certain amount of work out of you. I think, therefore, the best way to put the matter is that the Medical Superintendents are unfavourably placed—not for availing themselves of their clinical opportunities, but for the efficient discharge of their duties.

Dr. STEWART—I at once agree to amend the resolution as the President has suggested by inserting the words “That the Medical Superintendents of the Irish District Asylums are unfavourably placed for the discharge of their strictly professional duties.”

Dr. CLOUSTON—And could not at the same time a deputation nominated by our President be requested to wait on the Chief Secretary?

Dr. LALOR—He is absent now, and will not be back until September.

Dr. J. STEWART—Perhaps as our next meeting is to be in London, if the suggestion made by Dr. Clouston meets with approval, it might be left to the depu-

tation to choose their own time for waiting on the Chief Secretary; but I believe now is the time to have the matter settled that a deputation shall wait on him.

The PRESIDENT said he would be ready to give every assistance in his power to accomplish the object in view. He would suggest that a deputation of some of the strangers present should wait on the Inspector at once.

Dr. McKINSTRY—Could we not embody in our resolution some reference to the general position of the Irish Superintendents as compared with those of England and Scotland, and ask that we should be put on the same footing—so that there shall not be one law for the strong and another for the weak?

Dr. GARNER said it was important that they should not overstate their case. As a matter of fact they did not all, as Irish Superintendents, personally by themselves make out those returns which had been referred to by Dr. Stewart. They were responsible for the clerks who made out the returns in the same way as the matron was responsible for the officers under her charge. They were not personally to carry out the rules, but to see that the officers carried them out. It was important that their case should not be over-stated, as exaggeration is always injurious.

Dr. ROGERS—Is there anyone in the Irish Asylums corresponding to the Clerk in the English Asylums?

Dr. GARNER—Yes.

Dr. JAMES STEWART—A number of these unprofessional duties are connected with the Board meetings, and in England everything of this kind is conducted by the Clerk to the Visitors, whereas in Ireland the direction of everything connected with the Asylum is in the hands of the Superintendent.

Dr. GARNER read the Irish rules specifying the duties of the Clerk, who is to copy records, copy letters, keep the accounts, and examine receipts and vouchers. The Medical Superintendent had merely to see that the Clerk did his duty.

Dr. MACCABE—I agree with Dr. Garner that it is of the greatest importance that we should not injure our case by over-stating it to the Chief Secretary and the Inspectors, and it occurs to me that the most important point for the deputation and the Irish medical officers to carry out is the appointment of assistant medical officers. That practically would deal with the whole question. The resident Medical Superintendents would then be left at liberty to do something to retrieve our character from the reproach of not contributing to the scientific study and literature of mental disease. Let us bear in mind that the key of the position is to endeavour to get assistant officers appointed upon whom we can throw some of the routine and mechanical labour that now falls upon us (hear, hear).

Dr. ASHE—The Inspectors have gone a certain length with regard to the appointment of a resident pupil. If we could get them to say that the resident pupil "*shall*" be appointed instead of may be appointed, it would effect our object.

Dr. LINDSAY—Is there not sufficient purely medical work to more than engage the attention of every Medical Superintendent? (A voice: Yes.) Then it is clear that the appointment of an Assistant Medical Officer is not only advisable but necessary (hear, hear).

The resolution of Dr. Stewart as amended was then put and carried unanimously. In its amended form it was as follows:—

1. That in the opinion of this Association the Resident Medical Superintendents of the Irish District Asylums are unfavourably placed for the discharge of their strictly professional duties.

2. That their disadvantageous position in this respect is due chiefly to the following facts:—

(a.) The majority of Irish District Asylums (18 out of 22) have not a Resident Assistant Medical Officer.

(b.) The Superintendents of Irish District Asylums are over-burdened with non-professional duties unknown in the similar institutions of England and Scotland.

3. That a deputation of this Association, to be nominated by the President, wait on the Chief Secretary for Ireland, and also on the Inspectors of Lunatic Asylums in Ireland for the purpose of drawing their attention to the importance of the foregoing resolutions.

#### THE CAUSATION OF GENERAL PARALYSIS.

Dr. ASHE read a paper entitled, "Remarks on General Paralysis." (This will appear in a future No.).

Dr. MAJOR said he wished, in the first place, to make a few remarks as to the great disparity which existed in respect to the relative frequency of general paralysis. He was perfectly certain of the accuracy of what was stated, namely, that in many parts of this country, and on the Continent, great differences did exist in regard to the prevalence of this disease. There could be no doubt of it. He thought it might be explained in part by the fact that the ideas of people differed as to what was general paralysis and what was not. That is to say, some people regarded as general paralysis what was not so; and on the other hand, others, in their fear of putting down as general paralysis what was not so, put down as cases of chronic alcoholism what are really cases of general paralysis. This error was often made, because the case had not all the symptoms of general paralysis. He asked was that a reasonable argument? He said not. Take scarlatina, measles, or any other disease. If they did not happen to have every possible symptom there in its typical form, surely they would not be warranted in saying it was not a case of scarlatina or measles, as the case might be? So he thought many cases that were said to be chronic alcoholism, were, in reality, cases of general paralysis. He was visited recently by a Russian, who asked if he had any cases of general paralysis in women to show him. He said he had several, and showed him one which he thought a bad case. The gentleman examined the case, asked the woman some questions, and then said he thought it was a case of alcoholism, and not of general paralysis. It was not right to assume that every case of general paralysis was a typical case, complete in all its symptoms. As to what had been said about *cocculus indicus*, he was reading the other day a pamphlet by Dr. B. W. Richardson, on the adulteration of beer, and among all the specimens of beer sent him to analyse in not a single instance was he able to detect *cocculus indicus*. The adulteration was chiefly of water and salt. Dr. Richardson was a very ardent anti-alcohol man, and he would have found *cocculus indicus* if it existed. The next point he wished to refer to was the fatty degeneration of muscle. It was not a consequence of general paralysis. They found fatty degeneration in cases of general paralysis, and fatty degeneration of the spinal cord, and fatty degeneration of the general muscles in senile atrophy, but they could not distinguish one from the other. He thought the cause why the muscle was fatty in general paralysis was simply because it was disused. The same cause operated in senile atrophy of the brain. The patient has been lying in bed, probably disabled and unable to take exercise, and the muscle being disused, what was the necessary result? Fatty degeneration of the nerve cells in one case, and of the muscles in the other. In all their investigations into the pathology of the muscles in the insane, they should, in order to arrive at a correct conclusion, have someone working against them. If he had to examine the pathology of the brain in an asylum, there ought to be some man in an hospital where there was no insanity examining the cells of a healthy brain. If that were done there would be no fallacies, no working in a circle as they often did, and they would be more certain of their conclusions.

Dr. ASHE—With reference to *cocculus indicus*, that was a mere suggestion. It is the beer I blame for it.

Dr. LALOR—What is your opinion, Dr. Major, as to the cause of general paralysis?

Dr. MAJOR—I am not able at the present moment to answer that satisfactorily. Perhaps in some time hence I may do so if someone does not forestall me. I may just mention an instance to show the fallacy of drawing inferences

from mere pathological appearances. A brain which I believed was perfectly healthy was sent to me for examination; it was the brain of an intelligent man who died of a compound fracture of the leg. I examined it microscopically and found fatty degeneration of the nerve cells. If that man had been labouring under some mental disease and the brain sent to me for examination some time ago, I should have connected the mental affection with the fatty degeneration of the nerve cells, but now I should not do so.

Dr. McDOWALL said that in a locality with which he had been connected no cases of general paralysis were ever found to occur among the stationary inhabitants of the place. The few cases that were admitted were among people who had travelled and returned labouring under the disease of which they died in the Asylum. He mentioned that circumstance to some members of the Association, and some had found it to accord with their own experience, while others doubted its accuracy.

Dr. CLOUSTON said as this was a subject to which he had devoted considerable attention lately, he thought he ought not to allow it to pass without making a few observations. Going at once to the point—was general paralysis caused by phosphoric poisoning? He thought that was disposed of by several weak points in Dr. Ashe's induction. In the first place he was not aware that there was any fatty degeneration in an early stage of the disease. It was only seen in the later stages, when there was an ample cause for it in the state of the trophic nerves. He did not think there was any ground for thinking there was extra phosphorus in the system of those affected by the disease; and was general paralysis ever caused by actual phosphoric poisoning, acute or chronic? There was no proof that such was the case. Therefore he thought, however ingenious the theory might be, and however ably it might be supported, they had but little reason to suppose that this wonderful disease was caused by phosphoric poisoning. As to how it was caused, he, like Dr. Major, had been unable to come to a conclusion. The thing they did know was that the disease pathologically arose in the grey matter of the brain; it arose in the brain convolutions, and probably in the outer layer, where it touched the pia mater and the pia mater itself was affected. He had no doubt in his own mind that the true pathological seat of the disease was the outer layer of the convolutions of the brain, and all the recent investigations into the physiology of the nervous system agreed with this explanation of its pathology. All the experiments and all the new light thrown on the physiology of the brain showed that any disease approaching the nature of chronic inflammation in the outer layer of the brain convolutions will give rise to the series of symptoms which they called general paralysis in its first stage. It must be remembered that general paralysis was not the only progressive disease of the nervous system. Certain pathological affections of the nervous system were progressive—tended to go from bad to worse. Locomotor ataxy, for example, was one of these. It was the nature of nervous diseases to be progressive as a general rule, and general paralysis was not peculiar in that respect. As to the increase of the tendency to sexual excitement in general paralysis, he thought Dr. Ashe must surely be mistaken. In the earlier stages of locomotor ataxy it was much increased, and in the earlier stages of general paralysis it was diminished—certainly in the last stages, it almost ceased to exist—while in locomotor ataxy the sexual excitement was very much aggravated. In regard to the wonderful fact of the unequal distribution of general paralysis, there was no difference between Celt and Saxon as regards this disease. In Paris general paralysis was more frequent than in any other part of the world, and the French found it was increasing. He might remark that oatmeal, on which the inhabitants of Scotland lived, contained a larger amount of phosphorus than any other cereal food. He thought if they were to specify the causation of general paralysis it would be irritation, exhaustion, and excitation of the grey matter of the brain convolutions.

Dr. ASHE—Do the Highlanders live on it?

Dr. CLOUSTON—They live entirely on oatmeal, and yet general paralysis was

unknown in the higher districts, such as Inverness and Perth. The meeting was much obliged to Dr. Ashe for his interesting paper.

Dr. ASHE asked how it could be known that there was no fatty degeneration in the earlier stages of the disease? The existence of fatty degeneration could only be ascertained after the death of the individual. He should like to hear from Dr. Merrick what was his experience as to general paralysis in the Belfast Asylum?

Dr. MERRICK—I have not a single case.

Dr. JAMES STEWART—As son of the late Superintendent of the Belfast Asylum, after his experience of general paralysis in England, he went with great care over his father's patients on the occasion of ten or twelve visits, but failed to find any cases of the disease. He could say that his father felt it as a sort of unexpressed reproach to him personally that he was unable to diagnose the disease, because the facts seemed so strongly in favour of general paralysis being found there—the population of Belfast bearing a greater resemblance to the English than those of any other town in Ireland—that a number of his English friends in speaking of the subject almost gave him to understand that there were unrecognised cases. He could only say that his father did all he could to discover a case, and he failed, and he was there for forty years.

The remaining paper included in the agenda, "*On Mental Strain and Over-work*," could not be taken, as the preceding discussions occupied the time up to five o'clock. Dr. MacCabe's paper will be found at p. 388.

Dr. MAUDSLEY had much gratification in proposing a vote of thanks to the President and Council of the King's and Queen's College of Physicians for placing that hall at their disposal. He did not remember any meeting of the Association at which they had had better accommodation or a better conducted meeting than on the present occasion.

Dr. D. HACK TUKE seconded the vote of thanks, which was adopted, and briefly acknowledged by the President. The proceedings then terminated.

In the evening the members of the Association dined at the Shelbourne Hotel. Several distinguished Irish members of the profession were guests, viz., Dr. Haughton, the President of the College of Surgeons (Dr. Hamilton), Dr. Aquilla Smith, Dr. Nugent, &c. Those gentlemen expressed strongly their sense of the importance of the clinical teaching of mental and nervous diseases in their speeches after dinner.

The members were entertained to a cold collation by Dr. Lalor, after visiting the Richmond Asylum, and seeing the school-system there on the 12th (see p. 367), and to breakfast on the same day by Drs. I. and M. Eustace, at Highfield, after which they visited the asylums owned by these gentlemen, at Highfield and Glasneven as well as Farnham House, by invitation of its proprietor, Dr. Patton. They were driven to see the Botanic Gardens by Drs. Eustace too. In this way a most agreeable and profitable day was spent.

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#### ON THE RICHMOND ASYLUM SCHOOLS.

By D. HACK TUKE, M.D.

Among the reminiscences of the Annual Meeting of the Association held in Dublin, the visit to the Richmond District Lunatic Asylum will, I believe, be not the least interesting and instructive. To myself the schools which are in active operation there under Dr. Lalor were of deep interest, and I venture to think that some useful hints may be gathered from what we witnessed on the occasion. Indeed so valuable did the system pursued appear to me to be, that I stayed another day in Dublin in order to see more of the working of the schools, and to obtain further particulars. I propose briefly to note down for the benefit of others what I saw and heard. The education of lunatics is no new thing. At an early period school teaching was introduced into some American asylums. Dr. Earle was foremost in this good work. Thirty years ago Dr. Brigham spoke of the great advantages which had resulted from winter classes in the

State Asylum near Utica, New York.\* Asylum schools are also to be found on the Continent.

In Scotland, Mr. Browne long ago laboured to promote mental culture and literary work among his patients at Dumfries, and formed classes for drawing, Greek, Latin, &c. In England attempts have been made, but only partially successful, in the same direction.† I do not, therefore, put forward Dr. Lalor's ideas in regard to the education of the insane as novel. At the same time I am not aware that in any English asylum has the regular practice of teaching been so thoroughly carried out as at the asylum under his superintendence. Nor am I aware that others have met *with like success*. I shall be only too glad to find I am mistaken on these points. In the Richmond District Asylum there were at the commencement of this year 1039 patients, of whom 485 were males and 554 were females. Of these by far the larger number were labourers, domestic servants, tailors and seamstresses, shoemakers, carpenters and shopkeepers. There were 14 students and teachers, 3 medical men, and 2 lawyers. Twenty of the inmates paid something for their maintenance, the average rate of the paying patients being £22 10s. a year. These figures will show the class of patients upon which educational influence is brought to bear. Not a few on admission were unable to read or write. Of the number mentioned above, 130 were well educated (partly in consequence of instruction received in the asylum, we presume), 180 could read and write well, 343 indifferently, while 170 could read only, and 124 could not read or write, leaving 87 whose educational condition was "unascertained."

Now of this number—1039—120 men on an average were in the practice of attending school daily during last year, and among the women the corresponding number amounted to 130—being a full fourth of the whole. It may be interesting to the reader to know the number employed in other occupations. *Men*—Garden and farm labourers, 90; assisting servants to clean house, 65; miscellaneous employment, 27; shoemaking, 12; tailoring, 11; painting, 5; carpentry, 3. *Women*—Needlework, 114; assisting servants, 67; miscellaneous, 33; assisting in laundry, 55; knitting, 15; quilting, 9; fancy work, 1; total, 757—leaving somewhat more than one-fourth unemployed.

The pupils are divided into three classes on both sides of the house, there being three male and three female trained teachers. The rooms in which the school exercises were exhibited on the 12th of August are a portion of a new wing added about four years since. The patients stood in circles marked out by a chalk line, presenting a very orderly appearance, while the teacher asked them questions on geography, &c., or gave them an object lesson. While of course there was a great difference in the expression of those who were being taught, and in their responsiveness to the questions put to them, there was a general air not only of propriety but of interestedness which was very striking. Some, in fact, were extremely bright and lively, though not without an odd mixture of their mental vagaries. One man amused us much by his replies to geographical questions—trying to make fun of the subject, and professing, when he hesitated to reply, that he did not wish to commit himself. Among questions he was asked where the Mediterranean sea was? Well, he supposed that as "media" meant middle, and "terra" earth, that it was in the middle of the earth; and when pressed by the teacher to explain why the Mediterranean—"middle of the earth"—was so called, he replied, "that he supposed it was

\* Dr. Kirkbride writes me that at the Pennsylvania Hospital, "in place of a regular school-room, the teachers, or as we more commonly call them 'Companions' to the patients, visit them in the different wards and give their instruction by reading and conversation. This they do regularly every day, and in all the wards. I have always felt that a well-organised school would be valuable in any large hospital as a useful occupation of the mind."

American physicians have themselves been greatly struck with the appearance presented by Dr. Lalor's schools, and considered they had much to learn from them.

† At Hanwell a school, originally under the care of a paid master, is now in charge of a patient. There are, or have been schools at the Gloucester, Sussex, Lincoln, Stafford and Carlisle asylums. At the Devon asylum there is no regular school established, but a schoolmaster from the neighbouring village attends a couple of evenings weekly, and has a reading class, at which only a small number of the patients attend.

because there was so little of the world known at the time when it was christened." When asked what he thought of the large black circles on the map of the world, he said "they represented the two edges of the hemisphere into which small globes are sometimes divided."

I asked several whether they enjoyed these lessons, and they assured me they did. The teachers said the same thing. The pupils did not, while we were present, go up and down in the class, but I believe this plan is usually adopted. On my second visit one of the female teachers collected about 40 pupils and asked them a number of questions on "glass," in the object-lesson fashion. Correct and spirited replies were given. Its composition was stated, the story of its discovery related, and its properties described. Their replies to several questions I put to them at the close of the lesson showed they felt an interest in the subject. The dinner time, however, having arrived, I asked those who preferred dinner to school to hold up their hands, and I admit that a sufficient number responded to show that the former had greater attractions for them than the latter.

I have said there are six teachers engaged in the asylum. It will be asked what is their remuneration? The schoolmaster's salary is £50 a year. Estimated annual value of allowances\* £59 9s. 5d. Total value of post, £109 9s. 5d. The assistant receives £45, the allowances being equivalent to £59 9s. 5d. Total £104 9s. 5d. Second assistant, £30; estimated value of allowances, £54 17s. 11d. Total, £84 17s. 11d. The head mistress has a salary of £42 10s.; the allowance being estimated at £61 6s. 5d. Total value of post, £103 16s. 5d.—the difference between this and the schoolmaster's salary being less than commonly happens amongst school teachers in England. Her first assistant's salary is £30 10s.; allowances, £61 6s. 5d.; total value, £91 16s. 5d. The second assistant £20; allowances £57 17s. 11d.; total value, £87 17s. 11d. To those who are disposed to be sceptical as to the utility of asylum schools, who think that after all they are somewhat of a pretence and a show, I would ask—Is it likely that the governors of the Richmond Asylum would be willing to spend upwards of £580 a year upon them in remunerating their teachers, unless the results prove their undeniable utility? Or is it probable, that if it be a delusion, an experiment tried in 1855 should have resulted in a system which shows such unmistakable signs of vitality in 1875?

The schoolmaster has held his office for about 14 years, his assistants 13 and 7; the schoolmistress 20, and her assistants 13½ and 6.

It speaks well for all concerned that these teachers have held their posts so long.

I and my fellow Associates were forcibly struck with their earnestness, their patience, and their intelligence. Given these qualities, and we may be sure that good effects will follow from their teaching, while without a personal interest in and patient devotion to this arduous and no doubt trying work, disappointment will as surely follow the attempt to introduce school teaching more generally into our English asylums.† Upon the teachers devolve other duties than giving instruction. They superintend the patients at dinner time, before and after which grace is chanted by the attendants and patients, the words and music being the same as are in use at the Earlswood Idiot Asylum. The senior teacher has charge of the lending library. They conduct the choir in both the Roman Catholic and Protestant places of worship, and they undertake the special superintendence of a vocal and instrumental concert at a dance which takes place every fortnight.

For the benefit of those who may be inclined to introduce school teaching into the asylums under their charge (and I trust that this will be the case with many who have not yet done so), I add an exact statement of the mode in which the day is apportioned to the various subjects taught in the junior, middle, and senior divisions of the school, commencing on the male side :—

\* Under this head are included furnished apartments, rations, vegetables, fuel, light, washing, and attendance.

† In a letter to the writer, Dr. Kirkbride observes most truly, "Like most other means of occupation or amusement, to be successful, it requires on the part of the Superintendent, a determination that they (schools) shall be."

TIME TABLE OF RICHMOND ASYLUM MALE NATIONAL SCHOOL.

Morning	JUNIOR DIVISION.	MIDDLE DIVISION.	SENIOR DIVISION.
8.45 to 9	INSPECTION AS TO CLEANLINESS.		
9 to 9½	DESKS.—Writing.	FLOOR.—Reading.	CLASS ROOM.—Principles of Arithmetic.
9½ to 10	FLOOR.—Reading and Explanation or Arithmetic.	CLASS ROOM.—Geography and Object Lesson alternately.	DESKS.—Writing and Drawing alternately.
10 to 10½	VOCAL AND INSTRUMENTAL MUSIC.		
10½ to 11½	RECREATION AND OUT-DOOR AMUSEMENTS.		
11½ to 12	CLASS ROOM.—Object Lesson.	DESKS.—Writing and Dictation alternately.	FLOOR.—Reading and Grammar on alternate days.
12 to 12½	DESKS.—Arithmetic.	FLOOR.—Arithmetic.	CLASS ROOM.—Object Lesson and Geography, alternately.
Evening, 3 to 4	MIXED CONCERT CLASS ON WEDNESDAYS AND FRIDAYS.		
6½ to 7½	READINGS.—Object Lesson: Geography.	GEOGRAPHY.—Descriptive and Physical —Reading from different authors.	READINGS.—With Explanation.

NOTE.—Religious Instruction is given on Fridays, from 11½ until 12½ o'clock; the ordinary school business begins an hour earlier during the summer than in the winter half-year.

On the Female side, the arrangement of time is as follows:—

### RICHMOND ASYLUM FEMALE NATIONAL SCHOOL.

General or Combined Ordinary Instruction from 9.45 o'clock to 1.30 o'clock, and from 7 to 8 o'clock on the evenings of Monday, Wednesday, and Friday, closing on Saturdays at 12 o'clock.

OCCUPATION OF SCHOOL TIME.			
Morning Time	JUNIOR DIVISION.	MIDDLE DIVISION.	SENIOR DIVISION.
9.45 to 10	INSPECTION OF PUPILS.		
10 to 10½	Reading and Spelling.	Arithmetic.	Writing and Dictation.
10½ to 11	Marching to Music.	Reading and Spelling.	Arithmetic and Drawing alternately.
11 to 11½	Object Lesson: Mondays, Wednesdays, and Fridays. Tables, counting on Ball-Frame: Tuesdays, Thursdays, and Saturdays.	Writing and Dictation alternately. Geography on Saturdays.	Reading, Spelling, and Explanation. Geography on Saturdays.
11½ to 12½	RECREATION.		
12½ to 1	Writing and marking Figures on Slates.	Geography: Mondays and Wednesdays. Grammar: Tuesdays and Thursdays.	Singing. Geography: Mondays and Wednesdays.
1 to 1½	Singing.	Singing.	Grammar: Tuesdays and Thursdays.
EVENING SCHOOL.			
7 to 7½	Writing: Mondays, Wednesdays, and Fridays.	Writing: Mondays, Wednesdays, and Fridays.	Writing: Mondays, Wednesdays, and Fridays.
7½ to 8	Singing: Mondays and Wednesdays. Reading: Fridays.	Singing: Mondays and Wednesdays. Reading: Fridays.	Singing: Mondays and Wednesdays. Reading: Fridays.

NOTE.—Mixed Concert Classes on Wednesdays and Fridays, from 3 to 4 o'clock in the afternoon. Separate Religious Instruction, in the respective places of worship, from 12½ to 1½ o'clock on Fridays. Excursion to Park, Zoological and Botanical Gardens in the summer season, on Tuesdays and Fridays.

As will be seen from the above, these are National Schools. In 1865 a code of rules for the establishment and regulation of schools in lunatic asylums was issued by the Lord Lieutenant in Council. They are subject to inspection like ordinary schools, and have to use the books prepared by the National Board of Education. Gratuities are granted from time to time to the teachers.

The daily average number of patients attending school during the last year was, as already stated, 250, but it may be interesting to add how many attended under the various heads of instruction. Thus under reading, 270 attended; under writing on slates, 75; under writing on copies from books or headlines, 91; from dictation, 169; under grammar, 196; under geography, 158; under arithmetic (tables, simple rules, &c.), 88, (from ball frame) 46, (compound rules) 48, (proportion and interest) 28, mental arithmetic, 149; drawing class, 20; object lessons, 145; marching to music, 230; mixed concerts (bi-weekly), 72; fortnightly concerts, 50, attending singing classes daily, 70; assisting in teaching, 15—a particularly noteworthy fact; assisting in keeping accounts, 10; promoted from a lower to a higher class, 61. I will only add that the total number of pupils on the rolls of the school within last year, not reckoning the same pupil twice, was 496. The total number of patients under treatment during that period amounted to 1376.

The books made use of in the schools, those published under the direction of the Commissioners of National Education, are well adapted for the purpose. The reading books are six in number, and rise by easy gradations from the easiest to the most advanced lessons. In addition to these is an excellent girls' reading book. The copy books are those known as Vere Foster's. Some of them in use were interesting psychological studies, and afford a capital opportunity of obtaining specimens of lunatic handwriting.

This short sketch of the system of instruction so energetically pursued by Dr. Lalor at the Richmond Asylum would be imperfect, were I not to refer to the pleasing exhibition of musical talent, singing, and recitation which we witnessed during our visit. Upwards of 40 patients assembled in one of the school rooms—the females being somewhat in excess of the men, while a male patient, an excellent musician, presided at the harmonium. The vigor and spirit with which he played and sang called down repeated applause. Some solos were beautifully sung by the female patients. A selection of songs has been made for the use of the school, containing such pieces as "Hail, Smiling Morn," "The Men of Harlech," "Let Erin Remember," "The Shamrock," &c. The class joined heartily and with great effect in singing—

"Some folks like to sigh, some folks do, some folks do,  
Some folks like to die, but that's not me nor you.  
Long live the merry, merry heart  
That laughs both night and day,  
Like the queen of mirth, no matter what some folks say," &c.

It would be difficult to believe that the obvious pleasure with which this was sung, reflected as it was on the countenances of the singers, did not indicate the advantage likely to be derived from the practice in driving dull care away. There were several admirable recitations from the men; one being from Campbell's "Pleasures of Hope." A brass band, the members of which were dressed in uniform and numbered about 20, played outside, and were considered by those able to judge, to perform their part well. Lastly, a number of patients who marched through the rooms in military order showed how carefully they had been drilled. I may here mention that there are excellent school rooms in this asylum (used for day rooms as well) of ample length and height, the walls mostly hung with educational pictures representing animals and vegetables, published by the Society for Promoting Christian Knowledge. On the occasion of our visit many fancy articles were exhibited, such as artificial paper flowers, babies' shoes, netted articles, and needlework of various kinds.

The following is a complete programme of the "school exercises" on the day

we visited the Richmond Asylum, among which it will be seen the Doctor included two important items not usually supposed to belong to them. So far as the members of the Association were concerned with "dinner," I will only say that although they had had a sumptuous breakfast at 9 o'clock, provided for them by Drs. J. and M. Eustace, the arduous labours of the day made them thoroughly appreciate Dr. Lalor's hospitable table at four.

#### PROGRAMME OF SCHOOL EXERCISES.

Richmond Asylum, Thursday, 12th August, 1875.

Time.

#### MALE DEPARTMENT.

1.0 to 2. Reading, Geography, and Object Lessons alternately for respective Classes.

#### FEMALE DEPARTMENT.

2. to 3.0 Reading, Geography, and Object Lessons, alternately, for respective Classes.

3.0 to 3.45 Singing, Music, and Recitation.

#### CONCERT.—PART I.

Let Erin Remember, Chorus.

O, by Rivers, do.

Some Folks do, do.

Happy be Thy Dreams, Solo.

Recitation (The Deserted Village).

#### PART II.

The Men of Harlech, Chorus.

In Happy Moments, Solo.

The Heavens are Telling, Chorus.

3.45 to 4.0 Physical Exercises, Marching, &c.

God Save the Queen.

4. o'Clock. Dinner.

4.30 Dancing.

7.0 Supper.

I conclude by expressing my strong conviction that the introduction of schools into all County Asylums is of the greatest importance. Surely the gloomy monotony which is apt to creep into these institutions would be greatly lessened, if not prevented, by systematic instruction imparted in an able and interesting manner, and by the more frequent use of musical instruments. One great advantage of united tuition is that it brings a number of patients together, and subjects them to a certain amount of wholesome rivalry. It excites whatever desire to excel may remain in the breast of a lunatic, arouses the sluggish faculties, and stimulates laudable feeling. The attention is diverted for at least some hours from the delusions under which the patient labours, and is concentrated upon other subjects. It seems to me, indeed, impossible that the occupation and diversion of the mind which a school (including music, singing, &c.) provides can be other than beneficial. The immediate effect in causing actual recovery may not be apparent,\* and Dr. Lalor did not pretend that such was the case, but I was informed that an excited patient not unfrequently becomes tranquil after being brought into the class. Nor can it fail sometimes to avert, or at least to postpone the period when a patient threatened with fatuity sinks into helpless dementia. As regards incurable cases, upon

\* As curable patients would, of course, predominate among the pupils, no fair comparison can be made between the recoveries among the latter and the total population of the asylum; but it may be stated that in 1874, 76 pupils, or 30.5 per cent. were discharged recovered, whilst the percentage of recoveries on the total number under treatment was only about 11. The recoveries at this asylum from 1862 to 1874 (inclusive), reckoned on the admissions, amount to 45.5 per cent., a result which will compare satisfactorily with corresponding statistics in England, and it might not be illogical to connect the fact, in part at least, with the School System pursued by Dr. Lalor. During the 13 years ending 1871, the recoveries in England and Wales were, for county and borough asylums, 35.47, and for all our asylums and hospitals, 33.87.

which educational efforts may seem, at first sight, entirely thrown away, I must think that vicious habits are in many instances broken, and the direction of the thoughts turned, for a time at least, into a healthier channel. "Whence is it," says Pascal, "that this person, who has lately buried his only son, and who this morning was so full of lamentation, at present seems to have forgotten all?" "Be not surprised," he replies, "he is wholly taken up with looking which way the stag will turn which for the last six hours his dogs have been pursuing. This is sufficient, full as he is of sorrow. *As long as you can engage him in something, so long you can make him happy.*" The application of this truth to the insane is obvious. I have said there is nothing new in the endeavour to educate the insane, but in many instances where this has been done, it has been in the form of individual culture, by encouraging a patient to read, compose, draw, or play music, rather than by obtaining the services of a schoolmaster whose duty it is to teach the patients as systematically as he would give instruction in an ordinary Elementary School. I believe more has been done in England to induce the Greek scholar to read his Homer, the German scholar his Goethe, and to encourage the artist and musician to interest themselves in the pursuits they followed before they entered the asylum, than to *teach* those who are more or less ignorant. In short more has been attempted among private patients than among the pauper class, and it is to this point, *the introduction of well qualified, and therefore well paid schoolmasters and mistresses into all our County Asylums*, that I am anxious to attract fresh attention by the present paper. I hope the day is near when the schoolmaster will be regarded as an essential officer in every county asylum (possibly also in others where middle class patients are received) and that its organization will be regarded as seriously defective if it does not provide regular classes for elementary instruction as in ordinary day schools. Where no class for teaching the rudiments of knowledge exists, where writing, reading, and arithmetic form no part of the daily work of the pauper patients; where they are not *taught* to sing and induced to commit poetry to memory for recitation, I hold that one important aid to treatment, and to the attainment of greater mental quietude, is over-looked, even although such an asylum may have a band of music, concerts, dances, and amusements of various kinds, and as regards the female patients, may provide in addition, plenty of occupation in the way of knitting, sewing, and worsted work. Cricket, and other pastimes common in our asylums, excellent as they are in their way; farm labour, essential as it must always be; dramatic representations, fitted as they may be in some cases to divert the mind from melancholy thoughts; even lectures and writing essays for an asylum periodical (the latter not applicable to a pauper asylum) very beneficial as they doubtless are, will prove insufficient and by no means supply the place of *regular daily school teaching*. To Dr. Lalor, who since 1857\* has worked at this very important branch of the moral treatment of the insane, and has improved the small school he found, till it has attained its present efficiency,† I might almost say perfection, is due the greatest credit, and I am sure that he would feel that the best reward he could obtain, next to witnessing the advantages derived therefrom by his own patients, would be the extension of systematic teaching as practised in his institution into all asylums adapted for it throughout Great Britain as well as Ireland.

\* The date of his appointment.

† Ten years after its establishment, the Head Inspector of National Schools made the following entry: "The experiment of bringing lunatics under regular instruction, has been attended in this place with great success. Many of them take an evident interest in the business brought before them. Discipline and order are well maintained, mind and body are kept occupied. Some write an excellent hand, and all who have copy books manifest a great interest in keeping them neat and clean." I would add that one cause of Dr. Lalor's success is that he has kept in view the restoration and improvement of the weakened moral, intellectual and physical powers, and not merely the teaching of the three R's."

## MONUMENT TO THE LATE DR. SKAE.

A handsome granite monument has recently been erected in the Grange Cemetery, Edinburgh, to Dr. Skae by his old Assistants. It is in the form of a sculptured Celtic Cross on a massive pedestal, is made of grey Aberdeen granite polished, and has the following inscription:—"DAVID SKAE, M.D., born 5th July, 1814; died 18th April, 1873. For twenty-seven years Physician-Superintendent of the Royal Edinburgh Asylum at Morningside. Erected to his memory by those whom, receiving as Medical Assistants, he parted from as life-long friends. 'How good! How kind! And he is gone.'"—*In Memoriam*.

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*Correspondence.*

*To the Editors of the Journal of Mental Science.*

GENTLEMEN,—Will you allow me, through the medium of the "Journal of Mental Science," to ask for information from Medical Superintendents of Asylums upon the following point:—What is their experience as to the mortality in epilepsy, as epilepsy?—that is, excluding accidents incidental to the seizures, such as suffocation from the prone position, or impaction of food during meal times.

In my experience I have known three out of a total of forty epileptics to die—one from exhaustion consequent on repeated fits (56 in twenty-four hours), and two from arrest of respiration in rapidly recurring and very severe fits. The able Superintendent of Broadmoor in his last report records two deaths (out of a total of 18) from epileptic seizures.

I should be glad to obtain further information on the subject.

I beg to remain, &c.,

FREDERICK MACCABE, L.K., and Q.C.P., &c.

State Criminal Asylum, Dundrum, co. Dublin,

10th September, 1875.

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*Appointments.*

BLACKALL, J. J., M.D., C.M., has been appointed Assistant to the Medical Superintendent of the Richmond District Lunatic Asylum, Dublin, vice Petit, appointed Resident Medical Superintendent of the Donegal Lunatic Asylum, Letterkenny.

CALLCOTT, J. T., M.R.C.S.E., has been appointed Assistant Medical Officer to the Durham County Lunatic Asylum, Sedgfield.

COOKE, E. M., M.R.C.S.E., has been appointed Senior Assistant Medical Officer and Deputy Superintendent to the Worcester County and City Lunatic Asylum, Powick, vice Gowan, appointed Medical Superintendent of the Toronto Lunatic Asylum, Canada.

HARRISON, H. B., M.R.C.S.E., has been appointed Second Assistant Medical Officer to the Metropolitan District Asylum for Imbeciles, Caterham.

HICKSON, A. T., M.B., L.R.C.S.I., has been appointed Assistant Medical Officer to the Lancashire Lunatic Asylum, Rainhill, vice De Denne, resigned.

ISAAC, J. B., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Broadmoor Criminal Lunatic Asylum, vice Davies, appointed Senior Assistant Medical Officer to the Kent Lunatic Asylum, Barming-heath.

LOVETT, H. A., M.R.C.S.E., L.M., has been appointed Second Assistant Medical Officer to the Worcester County and City Lunatic Asylum, Powick, vice Cooke, appointed Senior Assistant Medical Officer and Deputy Superintendent.

PETIT, J., L.K.Q.C.P.I., L.M., L.R.C.S.I., has been appointed Resident Superintendent of the Donegal Lunatic Asylum, Letterkenny, vice Merrick, appointed to the Antrim Lunatic Asylum, Belfast.

THORNLEY, J. G., M.D., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Leicestershire and Rutlandshire Lunatic Asylum, Leicester, vice Dixon, resigned.

WOODS, O. T., M.D., L.R.C.S.I., Senior Assistant to the Warwick County Asylum, has been appointed Medical Superintendent of the Killarney District Asylum, vice Murphy, deceased.

## THE W. AND S. TUKE PRIZE ESSAY.

### EXTENSION OF TIME.

*Some of the descendants of WILLIAM and SAMUEL TUKE (the former of whom proposed the establishment of the York Retreat in 1792, and the latter wrote the "Description" of the humane system of treatment commenced there) having placed at the disposal of the Medico-Psychological Association the sum of One Hundred Guineas, the Association offers a prize of this amount for*

*"The best series of original Cases and Commentary, illustrative of the Somatic Aetiology of various Forms of Insanity, accompanied, when possible, in fatal cases, by reports of post-mortem examinations and microscopical preparations—their bearing on the symptoms being pointed out."*

*Cases not seen by the writer may be cited, but must be distinguished from those actually witnessed by himself.*

*The W. and S. TUKE PRIZE is open to all without restriction as to country, profession, &c., but the right is reserved to withhold it, should there be no essay of sufficient merit. Essays, to be written in English, and not in the author's handwriting, to be sent in a sealed envelope, bearing the motto of the essay, containing the name of the writer, to the undersigned, not later than June 30th, 1877. The microscopical preparations, but not the essay, to belong to the Association.*

W. RHYS WILLIAMS, M.D.,  
Hon. Sec.

Bethlem Royal Hospital, London,  
Dec., 1874.

*It will be observed that the time at which Essays are to be sent in has been extended from June 30th, 1876, to June 30th, 1877.*

DR. WILLIAMS wishes to express his regret that, owing to some mistake which at present he is unable to account for, several members did not receive the usual notice of the annual meeting.

# THE JOURNAL OF MENTAL SCIENCE.

[*Published by Authority of the Medico-Psychological Association.*]

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No. 60.

JANUARY, 1876.

Vol. XXI.

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## PART 1.—ORIGINAL ARTICLES.

*Reflex, Automatic, and Unconscious Cerebration: A History and a Criticism.* By THOMAS LAYCOCK, M.D., &c. Physician in Ordinary to the Queen for Scotland, and Professor of the Practice of Physic and of Clinical Medicine in the University of Edinburgh.

An Essay in the Journal of Mental Science for October, 1875, entitled, “Can Unconscious Cerebration be Proved?” by Dr. Ireland, Superintendent of the Institution for the Education of Imbeciles at Larbert, ends thus:—“In any case the theory of ‘unconscious cerebration’ derives no support from physiology. It is a child of the old metaphysics, to be brought forward and repelled by the study and analysis of mental operations, cognisable by internal examination.”

I.—I do not understand, whatever meaning may be attached to terms, how it is that the theory controverted derives no support from physiology; but I clearly see that the method recommended is that of speculative philosophy, which leaves the brains and their doings, or cerebral physiology, out of consideration, and depends upon the abstract process termed “internal examination.” The question as to method thus raised involves an answer to two other questions—viz. (1), Do all men use their brains in thinking and doing, so that, without brains, they can neither think nor do? And (2), if this be answered in the affirmative as a fact of experience, then is consciousness a cause, or is it a coincident and a result, of these changes in the brain-tissue upon which all manifestations of mind depend, and itself due to an “immaterial” cause?

In the year 1837, when I first turned my attention to the phenomena of mesmerism and of cerebral hysteria with a view to practical results, it was the general opinion, in this country

at least that consciousness was the cause of all those changes with which it is associated. Mind considered as a cause and consciousness were held to be identical. This doctrine I controverted. Many of the old school denied, too, that the brain had any essential connection with the intellectual powers. Sensations might have their seat there, but the reason was independent of brain-function. This doctrine I also controverted.

Dr. Ireland also opens his essay with another statement. "Unconscious cerebration," he says, "is regarded as so important a discovery that two well-known scientific men have contended for the priority of its publication." I cannot doubt that Dr. Carpenter and myself are here referred to. I therefore think it right to disclaim not only the paternity of the phrase "unconscious cerebration," but also of much of what is included under that phrase; and not merely because, like the phrase, it is Dr. Carpenter's, but because it is opposed to my views. And I would add, as only an act of justice to Dr. Carpenter, that in my opinion he has honestly endeavoured on various occasions to indicate our respective shares in the doctrine, although he has not, I think, been altogether successful. These acknowledgments include the fundamental principles upon which certain portions of Dr. Carpenter's views as named by him are based, together with their chief applications to the problems of mental philosophy and the needs of medical science and art. As to certain other principles, I differ entirely from Dr. Carpenter; neither do I agree with him as to his method, which includes too much, I think, of "the old metaphysics." Dr. Ireland's whole business as a physician is with brain-structure and brain-function; and being an intelligent thinker, although evidently of the old school, and a careful observer in his own department, I may assume that he is an example of the difficulties which men of culture find in understanding and accepting the theory. As to the doctrine of causation implied in the phrase "unconscious cerebration," and as to my share in its development, perhaps no one has manifested more strikingly these difficulties than Dr. Carpenter has from the date when he first took cognisance of my researches. These difficulties are due to two circumstances; firstly, the ambiguous meanings attached to phrases and terms derived from the "old metaphysics," and, secondly, to a too superficial perusal of the works in which my views are set forth. For these reasons, it happened, as I shall show, that Dr. Carpenter

not only formerly remained in ignorance of the exact bearings on mental science and practice of my theory of cerebral reflex function, but even still imperfectly comprehends it in regard to causation. It is with the hope of obviating these difficulties for those who are seeking after truth as to causation in mental philosophy, that I propose to trace the development of the doctrines comprised in the phrase “unconscious cerebration,” and show how the use of ambiguous terms has hindered the progress of exact knowledge as to the nature of mind and its manifestations.

II.—The first of these ambiguous terms is anatomical. Dr. Carpenter uses the word *cerebrum* in its derivative, *cerebration*, (*quasi cerebrumation*) to denote the *convolutions* of the *cerebrum* exclusively, whereas anatomists (without exception, I think) use it to denote both the *hemispheres* of the brain and their connexions, as the *crura cerebri* and pineal gland, and the ganglionic masses contained within them, viz., the *corpora striata*, *optic thalami*, *fornix*, *corpora albicantia*, &c., as well as the convolutions. Again, out of these and other ganglionic masses, as the olfactory ganglia, Dr. Carpenter constitutes another anatomical system, which he terms the *sensori*—more correctly the—*sensorio-motor* system, because he is of opinion it constitutes a *sensorium commune*. I am not aware that this system has had any strictly anatomical demonstration, and I may here say, once for all, that the physiological hypothesis seems to me to be exceedingly doubtful, if not wholly unproved.

The word “cerebration” was first used by Dr. Engledue, of Plymouth, on 20th June, 1842, in an address to the Phrenological Association, to denote a certain mode of functional activity of the *cerebrum*, according to the anatomy of Gall, who localised the organs or mechanism of the mind in the convolutions. The doctrines which Engledue expounded on that occasion acted like an explosive on the Association, and broke it up. He affirmed that phrenologists were in error in propounding that the brain is the organ of the mind, inasmuch as there is no such thing as mind. The brain is simply a viscus with its own proper functions, like the liver and kidneys. His doctrine was a true materialism of the *hylo-zoic* or atomic class. A passage will best elucidate this meaning of “cerebration”—

“We contend that mind has no existence—that we have to consider matter only. What is organised matter? Merely a collection of atoms, possessing certain properties, and assuming different and deter-

minate forms. What is brain? Merely one kind of organised matter. What do we mean by cerebration? The functions of the brain—one of the manifestations of animal life resulting from a peculiar combination of matter. The varied changes of form which this matter assumes give rise to the various manifestations of cerebration in the different tribes of beings, and the varied changes of cerebration in the same being originate in molecular alterations, merely other expressions of a new condition.

“Cerebration, then, expresses the manifestation of a series of actions resulting from the properties possessed by a particular portion of the organism (brain) when acted upon by appropriate powers. In the same way as organism generally has the power of manifesting, when the necessary stimuli are applied, the phenomena which we designate by the term life—so, one individual portion (brain) having peculiar and distinct properties, manifests, on the application of its appropriate stimuli, another species of action which we propose to call cerebration.” (Engledue’s Introductory Address, *Phrenological Journal*, Vol. xv., 1842, p. 295.)

It thus appears that the term *cerebration*, as first used, denoted two conclusions—first, that the cerebrum is put into functional activity by appropriate stimuli, and, secondly, that this is all; for mind, considered as a cause or an energy, has no share either in the development of the mechanism, or as to the way in which appropriate stimuli act thereon. The fallacy of Engledue’s views lies obviously in the word “merely”—when he says “That organised matter is *merely* a collection of atoms.” In arriving at this conclusion, he followed a common but very fallacious method, according to which the inquirer takes his own incapacities to be the measure of the capabilities of all others, and then concludes from his ignorance of a thing to its non-existence. Thus Engledue says—“The ‘why or how’ such a form of matter is capable of manifesting such peculiar function we cannot explain,” meaning by “we” that he cannot; and then, after thus confessing his ignorance and incapacity, he denies that there is any other cause than the atoms themselves. A little further consideration of the “order of nature” would have convinced him that the same brains which helped him to a knowledge of atoms (things wholly beyond observation) would also have helped him, when rightly used, to a knowledge of energies, things much more demonstrable than atoms.

III.—I shall not consider the ambiguous uses of the word “unconscious” and of other metaphysical phrases, until I have more clearly shown how the doctrines of unconscious cerebration arose and were developed. Dr. Carpenter gave a brief

history in the "Quarterly Review" of October, 1871, in an essay entitled "On Spiritualism and its recent Converts," which I shall examine.

"As far back as the year 1844 a very important memoir was published by Dr. Laycock (now Professor of [the Practice of] Medicine in the University of Edinburgh) on the reflex action [function] of the brain, in which he most distinctly showed that involuntary muscular movements take place in response, not merely to sensations, but to ideas; and not merely at the prompting of ideas actually before the mind, but through the action of the *substrata* left by past mental operations. Thus, for example, the convulsive paroxysm of hydrophobia may be excited not merely by the sight or the sound of water, but by the idea of water suggested either by a picture or the verbal mention of it. But as Dr. Laycock did not at that time recognise the essential distinctness of the *sensory ganglia* from the cerebrum, which—being so obscurely marked in the brain of man as to be commonly overlooked—can only be properly appreciated by the student of Comparative Anatomy, he confounded together the two classes of actions of which they are the separate instruments, and his views did not receive the attention they merited. The doctrine of the reflex action of the sensory ganglia having been long previously taught by Dr. Carpenter under the title of 'Sensori-motor activity,' he was subsequently led, by Dr. Laycock's reasoning, to see that it might be extended to the cerebrum proper. And on the 12th March, 1852, some months before the Table-turning broke out, he delivered a lecture at the Royal Institution on what he termed the *Ideo-motor* principle of action, which consists in the involuntary response made by the muscles to ideas with which the mind may be possessed when the directing power of the will is in abeyance, considered as the 'reflex action' of the cerebrum proper. 'This Ideo-motor principle,' said Dr. Carpenter, "finds its appropriate place in the physiological system, which would, indeed, be incomplete without it. And, when it is once recognised, it may be applied to the explanation of numerous phenomena which have been a source of perplexity to many who have been convinced of their genuineness, and who could not see any mode of reconciling them with the known laws of nervous action. These phenomena have been clearly proved to depend upon the state of *expectant attention* on the part of the performer, his will being temporarily withdrawn from the control of his muscles by the state of abstraction to which his mind is given up, and the *anticipation* of a given result being the stimulus which directly and involuntarily prompts the muscular movements that produce it.

"This doctrine was at once accepted by many of our highest physiological authorities, so that when Professor Faraday was called upon to explain the mystery of table-turning (which had not then been attributed either to 'diabolical' or to 'spiritual' agency, but was popularly

supposed to be due to electricity), he was able not merely to prove by the ingenious 'indicator' he devised, that the movement is really and solely due to the muscular action of the operators, but to refer for a scientific *rationale* of that action to a physiological principle distinctly formularised more than two years previously, and less precisely enunciated nine years before." (*Spiritualism and its Recent Converts*: Quarterly Review, Oct., 1871, pp. 310, 311.)

It will be observed here that I have had to correct the title given to my Essay, and alter the word "action" to "function"—a most material difference when investigating causation. This I shall specially notice shortly.

A primary step in questions of priority is to fix dates accurately; as to these, we have the first illustration of one of the causes just mentioned of Dr. Carpenter's difficulties. Faraday wrote to "The Times" on the 30th June, and to the "Athenæum" on the 2nd July, 1853. In his letters he distinctly points out that the movements of the tables were then attributed to supernatural and spiritual agencies, and laments, in forcible language, the ignorance and folly of the notion.\* Again, it is not clear what Dr. Carpenter means exactly when fixing the date of his physiological explanation of the true causation at "nine years before;" whether the nine years date from the reading of his paper in March, 1852, or from the experiments of Faraday in 1853; but taking the latter date (as seems to be meant), the year 1844 is that in which Dr. Carpenter less precisely enunciated the explanation in question. I think that "nine" must be a misprint, for in that year, as will shortly be seen, although he was strongly advocating his "sensori-motor system," yet he nevertheless found that "everything beyond this was mysterious and incomprehensible."

Again, how far Dr. Carpenter is accurate in fixing the year 1844 as the date when my views were first promulgated, will be best shown by the following introductory paragraph from the Essay to which Dr. Carpenter refers.†

"Four years have elapsed since I published my opinion, supported by such arguments as I could then state, that the brain, although the organ of consciousness, was [is] subject to the laws of reflex action, and in this respect it did [does] not differ from the other ganglia of

\* "Life and Letters of Faraday," by Bence Jones, vol. ii., p. 304.

† *On the Reflex Function of the Brain*. Read at York, before the Medical Section of the British Association for the Advancement of Science on 28th September, 1844. With an Appendix.—British and Foreign Medical Review, January, 1845, p. 298.

the nervous system.\* I was led to this opinion by the general principle that the ganglia within the cranium, being a continuation of the spinal cord, must necessarily be regulated as to their action on external agencies, according to laws identical with those governing the functions of the spinal ganglia and their analogues in the lower animals. And I was confirmed in this opinion by finding, after the investigation and collocation of known facts, that observations and arguments like these satisfactorily adduced in proof of the reflex function of the spinal ganglia may be brought forward in proof that the cerebral ganglia have similar endowments."

Although the subject was at this date thus limited, the views I had advanced four years previously were of a much more comprehensive scope, as is expressed in the following passage from the chapter referred to. After examining certain generalisations, I say:—

"The importance of these doctrines is apparent. They corroborate the truth of the proposition already laid down, that the cranial ganglia, although the organ of consciousness, are subject to the same laws as those which govern the other ganglia, the diffused nervous system of animals, and the vital mechanism of plants."—(Treatise on the Nervous Diseases of Women, 1840, p. 107.)

From these extracts it will be seen that it was in 1840, and not in 1844, that I extended inquiry as to mechanism and energies beyond the comparative anatomy of the vertebrates, so as to include not only the nervous system of all animals, but also the vital mechanism and energies of plant life. No doubt Dr. Carpenter was led, in 1851, by investigation into the phenomena of mesmerism, to the adoption of the doctrine of the reflex function of the brain, but I also was led in 1837-38 to a like investigation. At that time I was attached to the York County Hospital as house surgeon, and had opportunities of investigating the phenomena both clinically and experimentally, and more especially as manifested in women under the various forms of cerebral hysteria. The results of these researches were communicated from time to time to the "Edinburgh Medical and Surgical Journal," 1838-39, and conjointly are equal to an octavo volume of more than 200 closely printed pages. My Treatise on the Nervous Diseases of Women

\* This date refers to 1840, when my "Treatise on the Nervous Diseases of Women," was published, in which there is a chapter (p. 105) headed, "The Instinctive Actions in Relation to Consciousness: the Brain subject to the laws of Reflex Action."

(1840) was, as stated by the preface, a second edition of these essays.\*

IV.—So much as to dates; next as to the *method* of inquiry. Dr. Carpenter is of opinion that the desired knowledge is to be attained by a study of the comparative anatomy of the nervous system, more especially of vertebrates, and hints that I did not appreciate the truth of the principles upon which his sensori-motor system is founded, because I was deficient in that knowledge. The obvious objection to this method is, that the inquirer never can know, as facts of observation, what are the states of consciousness of lower animals when inquiring into its relations to their mechanism. True it is, that for the sake of comparison with the mechanism and energies of man that knowledge is needed; but it is an error of inference on the part of Dr. Carpenter that I had not the knowledge. This error is, however, of little importance. It is, perhaps, sufficient to say that, like Dr. Carpenter himself, I studied Comparative Anatomy at University College under “the English Cuvier”—Robt. E. Grant—and was a diligent reader of Dr. Carpenter’s “Principles of Human and Comparative Physiology.” But in the course of my inquiries (after 1845) I came also upon the “*Zoologie Philosophique*,” of Lamarck—an important forerunner of Darwin, who showed not only the mechanism of living things, but the processes by which that mechanism is both constituted and moved. It was also by the aid of such generalisations as those of Wolff, Goethe, and von Baer, that I was led to use more firmly than I otherwise should have done the hypothesis of evolution, to which I added that of reversion as the law of both mental and general pathology. In the essay published in July, 1839 (but which was in the hands of the editor of the “*Edinburgh Medical and Surgical Journal*” during the previous autumn), will be found the outline of that method laid down, and the law of evolution taken as the guide to inquiry as follows:—

“20. If we would obtain a large and definite knowledge of the action of force [as motion] upon matter and intelligence, in exciting the phenomena of life and thought as displayed in man, we must

\* By T. Laycock, House-Surgeon to the York County Hospital: A Selection of Cases presenting Aggravated and Irregular Forms of Hysteria, with Analysis of their Phenomena. *Edinburgh Medical and Surgical Journal*, Jan., 1838. Hysterical Ischuria, April, 1838. Hysterical Hæmorrhages and Nervous Affections and part of Analysis, July, 1838. Analysis continued, October, 1838. Analytical Essay, July, 1839.

examine the law of its action [*i.e.*, of force as motion] as exhibited both in every living organism and in the molecular changes of inorganic matter. A thousand circumstances assure us that between these last and the highest efforts of the human intellect, there is a continuous chain of phenomena, although we have been unable to follow it link by link. These links are so continuous between certain vegetables and animals of the lowest class that naturalists have been unable to decide whether the organism should be placed in the animal or the vegetable kingdom.”—(p. 9, *op. cit.*)

Here, then, is a statement that we have molecular physics and energies as vital chemistry to deal with evolutionally, in our investigation into life and thought and will, and that the law of *continuous* evolution is the guiding principle. This is followed by a short exposition of the evolutionary mechanism, *i.e.*, the evolutionary anatomy of the nervous system.

From these facts it is clear, I trust, that there has been a fundamental difference *ab initio* between Dr. Carpenter and me as to method; for although he dealt restrictedly with the mechanism evolutionally, in so far as the nervous system is concerned, through its comparative anatomy, on the other hand he at that time left wholly out of consideration the evolutionary anatomy of the hemispherical ganglia, and therewith the evolution of the vital energies or forces into mental activity. How little his method served him, and many others who followed this method, in elucidating brain function, is shown by what Dr. Carpenter had to say in regard to its results at this same date:—

“The complexity of the operations of the *mind*, and the impossibility of deriving from the study of the lower animals any assistance which can be relied upon in their analogies, have hitherto been a complete bar to the successful investigation of them as portions of the nervous system. *It is, as yet, quite uncertain how far mental acts are dependent on or connected with any changes in its condition.*” (Principles of General and Comparative Physiology. By W. B. Carpenter, Lond., 1838, p. 454.)

In the last paragraph Dr. Carpenter must only be understood as witnessing to his own convictions; the school of Gall and Spurzheim was then in full activity with a principle just the contrary. His was the doubt expressed then, as now, by “the old school of metaphysics,” so that it is a matter of course that Dr. Carpenter should use the phrases and terms of that school, and this as much as ever in his latest work, “Mental Physiology.”

The method I followed in working out this unsolved problem was, in fact, to examine the analogies which Dr. Carpenter stated in 1839, in the extract just given, to be a complete bar to the exact study of cerebro-mental phenomena. But this I did by investigating sequences and coincidences, as well as differences and resemblances. In doing this I took the sequences and coincidences included under "spinal reflex function" as a starting point, and endeavoured to show that the actions or muscular movements under investigation exactly resemble, as to the *condition* under which they occur (or, in popular phrase their causes), the class of "reflex acts" and actions, whether they are named sensational, ideational, volitional, intellectual, instinctive, or involuntary; and are due to conditions or functions of brain or of nerve-centres, which conditions coincide with other conditions of brain upon which the states of consciousness named sensation, ideation, volition, will, or instinct depend.

It is, therefore, as to "the order of nature" in causation that Dr. Carpenter misunderstood me. I held that consciousness *per se* is not a cause, as taught by the "old metaphysics," but a coincidence—although as to evolutionary life an essential coincidence; and, as such, the manifestation of an "immanent" energy, the cause of both life and consciousness.

It was as to this principle and its applications to certain departments of Mental Science and the practice of medicine that I made the reclamation alluded to. When with this view of causation I formally extended the doctrine of spinal reflex function to the brain, I certainly took care to state it as explicitly as language allowed. After premising a summary of spinal reflex phenomena in their relations to coincident sensations, which were then admitted (sensation denoting a state of consciousness of some kind—no matter how defined), I pointed out that all other states of consciousness, including ideation and volition, are not causes but coincidences of the acts, and themselves due to cerebral conditions or functions excited reflexly.\* The actions occur, to use the words of Prochaska, "*Mens conscia vel inscia.*" On the other hand Dr. Carpenter, noting a constant connection of states of consciousness named sensations with certain combined muscular movements, concluded that the sensation is an antecedent and not a coincident of the acts in question. In this way he considered these states of consciousness to be causes.

\* "Brit. and For. Med. Rev.," vol. xix. (Jan., 1845), p. 299, 300.

Now this is precisely what was then the teaching of Alison and John Reid, as well as of Dr. Carpenter, and had been for a long period before that date of Whytt and others. It was, in fact, a part of the universally current opinion that consciousness in every form is the cause of certain movements. My object was to show that herein the coincident was put for the antecedent. It follows, therefore, that in the "Quarterly Review" for October, 1871, Dr. Carpenter states precisely the contrary to my view when he affirms that I "showed involuntary muscular movements take place in response to sensations, and not merely to sensations, but to ideas." This is probably one of the propositions which Dr. Ireland thinks to be a child of the old metaphysics, and which it certainly is.

V.—But another source of error is to be found in Dr. Carpenter's ambiguous use of the phrases *reflex action* and *reflex function* in relation to the word sensation. As used by Hall, and by all physiologists since his time, reflex function wholly excluding sensation as a cause. The phrase was expressly adopted to set forth the doctrine that the class of actions termed reflex are wholly independent of sensation, whether it be considered a cause, or a condition, or a coincidence. When, therefore, Dr. Carpenter says that his doctrine of the *reflex action* (meaning function) of his sensori-motor system had been long previously taught by him, he is again in error, inasmuch as he confounds the conscious state named sensation with reflex function as a cause. This is clearly shown by his own words in the subjoined extract from a letter he wrote to Forbes in November, 1844, after reading my Essay in proof, which Forbes sent to him. The italics in the letter are in the original, thus giving the most conclusive proof of the ambiguity I have described.\*

"I am much obliged by the sight of Laycock's paper, which is very much what I expected it to be. The *class of actions* to which he refers I had distinguished in *my first paper* on the subject. By my subsequent investigations I had been led to refer them to the *ganglia* of special sense, which stand in the same relation to the *nerves* of special sense as the segments of the true spinal cord to its afferent

\* I may properly remark here, as to this correspondence, that Forbes did not send the letters to me as being "private and confidential," but in his public capacity as Editor of the "Brit. and For. Med. Review," in which my essay was to appear, and with the request that I should point out in what particulars my views differed from those of Dr. Carpenter, with a view to publication with the Essay. I wrote an *addendum* in compliance with this request, which now lies before me, but Forbes did not publish it.

nerves, and which have also a distinct connection with the motor tract of the med. oblong. I did not apply the term *reflex* to them, because I considered it better to restrict that to the actions of the spinal cord. But I pointed out the *immediate dependence of the motion upon the sensation*, which is, in effect, the same thing. Dr. L. refers this class of actions (first distinguished and defined in the paper I allude to) to the cerebral hemispheres, which seems to me to imply an utter ignorance of the Comparative Anatomy of the Nervous Centres. I do not care to enter into a controversy on the subject. *Magna est veritas*, &c.—Yours most sincerely,  
W. B. CARPENTER."

In a subsequent letter to Forbes, dated 27th Nov., 1844, Dr. Carpenter entered more fully into the subject, and affirmed the emotional character—that is, as due to emotion—of the convulsive paroxysms of hydrophobia, as follows:—

"I should like to know where he [Dr. L.] had pointed out the *emotional* nature of hydrophobia before my 'Human Physiology,' where it is pointedly stated, and the illustrations given. . . . I had a battle to fight with Marshall Hall, who connected the emotional system with the spinal, and my comparison of tetanus went to prove their distinctness."

The controversy with Hall here referred to arose out of ambiguities precisely like those I have illustrated. Hall fixed the limits of his "true spinal system" at the tubercula quadrigemina inclusive; these and all the nerve-centres below, including those of the cord and bulb, are merely physical centres, with which consciousness has no causal relation whatever; all above are the seat of, and are acted on by, the "soul." Dr. Carpenter, on the other hand, included the tubercula and certain centres of the bulb in his "sensori-motor system." These are not, according to him, the seat of the soul, but of sensation; and "guiding sensations" seated here are the causes of consensual or "sensori-motor" actions. Hall naturally objected to the theories of both the anatomy and the causation, and more especially because the consensual actions, which are the signs of the instinctive feelings and emotions, were also included by Dr. Carpenter in his "sensori-motor system."

Whatever truth there may be in any of the hypotheses, these facts are instructive illustrations (and they might be greatly multiplied) of the misleading influence on physiological research of ambiguous terms and phrases, and more especially of those of "the old metaphysics." That they are thus generally operative is certain. Ten years later

Dr. Carpenter discovered his erroneous conclusions, when, through our common friend, Sir John Forbes, I reclaimed the fundamental principle of "unconscious cerebration," and its chief applications to mental science, at the time Dr. Carpenter claimed them in the fifth edition of his "Human Physiology" (1855). In a most friendly letter to me of date 12th June, 1855, he attributes his misapprehension of my views to the fact that my terms were obscure, because I made use of phraseology that itself required to be learned, and the terms of which do not always bear the meaning that their etymology would suggest. More particularly Dr. Carpenter remarks at this date as to his sensori-motor system :—

"In the second edition of my 'Human Physiology,' which I had completed before the York meeting of the B.A. at which your paper was read, I brought the doctrine of consensual action and the reflex functions of the sensory ganglia into still greater prominence. Up to that time, however, I must fully admit that the idea of reflex action as applicable to the cerebrum had never crossed my mind. I believe that I did not hear your paper read, but first *saw* it in the B. and F.M.R., and I well remember the very puzzled state in which it left me. My first and strongest impression was, that you had *thrown back* the subject by ignoring all that I had tried to do in the disentanglement and explanation of the instinctive actions; that you had erroneously attributed to the cerebrum a great number of phenomena which, being sensori-motor, were [are] performed through the instrumentality of the sensory ganglia, and that everything beyond this was mysterious and incomprehensible."

Further correspondence on the points discussed cleared up Dr. Carpenter's difficulties, and I shortly received a recognition of my claim as follows :—

"I certainly did think when I wrote the note ('Physiology,' fifth ed., p. 554) to which you refer, that the application of the doctrine of Cerebral Reflex Action to Insanity, Dreaming, Delirium, Somnambulism, Hypnotism, Electro-biology, Reverie, &c., was original with myself, and have only *now* discovered, by a reference to your paper (Appendix VI.) that you had yourself distinctly marked out this development of your doctrine. . . . I must say, in my own defence, that neither Noble, Symonds, nor (I think) Forbes expressed the least doubt that *this* part of the subject was fairly mine, as neither of them seemed at all aware that you had made it so clearly your own at the very outset. I shall, of course, alter this passage in my next edition, and only regret that you did not call my attention to it after the publication of the fourth. Of course I should not now speak of myself as having formularised the doctrine of

‘Ideo-motor action,’ in any other sense than as having separated it, both anatomically and physiologically, from sensori-motor action. The fact is simply—as I believe that I said before—I did not carefully examine your paper (as I admit I ought to have done) to see what more it contained, when I first began to understand and appreciate its real meaning.”

I subjoin the passage to which Dr. Carpenter refers:—

“VI.—*The Association of Ideas.* Being like the association of movements [consensual actions], the true explanation of the association of ideas is to be found in the doctrine of the reflex function of the brain. The mode of action of the sensory gray matter is strictly analogous to that of the motor gray matter, both with reference to its substrata and the diffusion of afferent impulses through it. Insanity and dreaming present the best field for investigating the laws of that extension of action from one portion of the brain to the other, by which ideas follow each other in sequence. An interesting example for study is now in the Retreat, near York. This person seems to be utterly will-less. He expresses his ideas as they spontaneously arise in associated sequence, the combinations being singularly varied, but traceable to a common root or centre of impulse. Researches of this kind, whether instituted on the insane, the somnambulist, the dreamer, or the delirious, must be considered like researches in analytical chemistry. The reagent is the impression made on [the hemispheres of] the brain; the molecular changes following the application of the reagent are made known to us as ideas. In chemical analysis we know molecular changes [in matter] only by the change in form, refractive powers, and other circumstances induced by the reagent; in cerebral analysis we *feel* the changes or observe their results through the efferent nerves. It is very probable that only in researches of this kind can a scientific spiritualism be established, and through them the link seized that connects the spiritual with the material world.”—(British and Foreign Medical Rev., Jan., 1845, p. 311).

Unfortunately, Dr. Carpenter had not fulfilled his promise as above when I published my systematic work in 1860, so that in the meanwhile the fundamental doctrine of “unconscious cerebration” was attributed to him. This placed me under the imperious necessity of making that public reclamation which I had been most anxious to avoid. I felt that unless I did this I exposed myself to the charge of plagiarising from Dr. Carpenter. I reclaimed, therefore, in an *appendix* to that systematic work.

It cannot be doubted, I think, that Dr. Carpenter gave a correct exposition of the circumstances under which he worked out his share of the problems. Having adopted the theory of

reflex cerebral *function*, its logical application to unconscious cerebral *actions* obviously followed, since the absence of consciousness as a cause is of the very essence of the theory of reflex *actions* of any kind. But it is, I think, equally certain that Dr. Carpenter still held (as, indeed, he still holds) states of consciousness to be causes ; for the phrase “ideo-motor” points to the current notion that ideas excite cerebral reflex acts just as sensation excites sensori-motor acts. What he was working out was, in fact, an *anatomical* classification of the mechanism of mind (as he affirms) ; but this being so, the naming should have been anatomical, and *cerebro-motor* used instead of *ideo-motor*. This would have been in strict accordance with the phrase reflex *function* as used by Hall, who maintained that it was the *function* of the centres he termed spinal to regulate adaptive acts, independently of any states of consciousness whatever, all which with him were causes. Now Dr. Carpenter is so embarrassed by his two-fold use of the phrase and of sensation, that he is unable to account for man’s freedom of action, if the “automatic” action of the convolutions be solely considered ; he therefore adopted and applied (as we shall see shortly) a doctrine of causation as to free-will of the “old metaphysics.”

VI.—There is another set of words and phrases used ambiguously in both cerebral physiology and mental philosophy in connection with the terms reflex function, consciousness, mind, &c. These are the words *automaton*, and its derivatives—*automatic*, *automatism*. The term *automaton* is derived from the ancient Greek word *αὐτοματός*, the primary meaning of which, according to Liddell and Scott, is “acting of one’s own will, of one’s self.” It evidently, therefore, included the notion of a living mechanism having a self-determining power or capability. When it became necessary to name a mechanism which is self-acting in the same sense as living things, and more especially as a man is, that is to say, from some *hidden* apparatus and source of energy such that adaptations of the motions to ends resulted, the name *automaton* (in the neuter) was given to it. In modern times such mechanism shaped and constructed so as to move when in action, like men and animals, are specially *automata*. In this way it is that the term has departed wholly from its primary sense (as all such metaphorical words do), so as to denote a thing constructed to imitate a living being as to form and motion. Gall and others using the word in the sense of a living mechanism of which consciousness is not the motor energy,

applied it to plant-motions; but Descartes pronounced all animals below man in the scale of being to be no more endowed with consciousness than plants—they also are living *automata*. This conclusion followed necessarily from his hypothesis, that not only is consciousness the sole cause of consciously—in the sense of knowingly—adapted acts, but that it is the element which constitutes the soul or mind of man. And since souls cannot, according to this hypothesis, be possessed by brutes, they must necessarily be denied the endowment of consciousness. On the other hand, consciousness was with him not only the cause, but the proof of soul-life. Hence his well-known *dictum*, *cogito ergo sum*. To connect this hypothetical soul with the living mechanism, it was necessary to fix a central place whence it could act on that mechanism, and thus Descartes selected the pineal gland as the *sensorium commune*. There is a fundamental question to be settled, however, as to this part of the hypothesis—viz., Is there a *sensorium commune*? Is such a thing necessary? Plants are organisms, and seeds are unified potentialities of *one* thing; have they the analogue of a unifying *sensorium commune* as to mechanism?

Dr. Carpenter's hypothesis of a "self-determining power" peculiar to man is, therefore, similar to that of the Cartesian soul, and, like that hypothesis, needs a central place of consciousness and action, or *sensorium commune*. This is to be found in his "sensori-motor" system, whence originate the reflex actions as involuntary movements, which are due to sensation, and where also consciousness as ideation is experienced; so that that system takes the place of the pineal gland in the Cartesian anatomy. Sensational and ideational involuntary movements he further differentiates as "automatic actions of the body," from the "automatic actions of the mind" which are the automatic processes, included under "unconscious cerebration" that go on in the hemispherical convolutions. The results of these processes he designates "automatic mind," and propounds the hypothesis that this is the normal order of nature in the cerebro-mental activity of lower animals and young children. I subjoin a list of these "automatic actions" from the index to his "Mental Physiology:"—

"*Automatic Action of Body*: Mechanism of (see *reflex action*)—nervous system; in Ascidian; in Centipede; in Mantis; in Dysticus; of spinal cord in Frog; in man; of sensory ganglia; of cerebrum.

*Automatic Action of Mind* [in chaps. 14 and 16]: In attention;

in succession of thought; in reasoning; in common sense; in judgments; in imagination; in abstraction and reverie; in electro-biology; in somnambulism; in hypnotism; in intoxication (see *children*)."

Looking now to the context for the meanings which Dr. Carpenter attaches to the word *automaton*, and to its derivatives, I find they are two which are widely distinct and different in a scientific sense. By one meaning he denotes a mere mechanical apparatus made to resemble a living thing, but wholly devoid of life and consciousness; by another he indicates the structure of the brain, considered as a mechanism endowed both with life and consciousness, as sensation and thought, and brought into activity by energies appropriate to it, yet not guided by reason, judgment, or "the will." Consequently, since men are so guided, it becomes necessary to his hypothesis of automatic brain-work, that there shall be an energy operative in and on the brain which is distinct from, and independent of, the brain as an automatic mechanism, and which regulates its automatic activity. To facilitate the comprehension of this view, Dr. Carpenter personifies the energy which he names "a self-determining power" and "the will," and says, that in working out volitional acts this energy does not distinctly produce the result of any volition, "but plays, as it were, on the automatic apparatus by which the requisite nervo-muscular combination is brought into action." He adduces two proofs of this view—one a scholastic hypothesis, promulgated by Cardinal Manning, which excludes all consideration of the mechanism of thought and will; the other his own, founded on such consideration. It naturally follows that if by any chance "the will" be withdrawn or be prevented exercising its control (and this is the condition of the insane and the dreamer) the automatic action of the brain comes into play, and the individual becomes an *automaton*—conscious, it is true, but with no power to regulate his thoughts and conduct. The lower animals have not this will-power; hence, are natural yet conscious automata. Their intellectual condition is like that of dreaming or of childhood in man. But Dr. Carpenter shall state his own views:—

"We can scarcely desire a better proof that our possession of this power is a reality, and not a self-delusion, than is afforded by the comparison of the *normal* condition of the mind with these various *abnormal* conditions hereafter to be described (chaps. xiv-xvi.), in which the directing power of the Will is in abeyance. For the "subjects" of these

conditions may *really* be considered as mere thinking automata, puppets pulled by directing strings; their whole course of thought and of action being determined by suggestions conveyed from without, and their own will having no power to modify or direct this, owing to the temporary suspension of its influence.”—(Mental Physiology, p. 6.)

Here a metaphor is put for a fact of observation; for obviously it cannot be truly affirmed that there is any biological resemblance between a puppet or doll having its limbs moved by pulling the strings attached to them, and the man who made the puppet and pulls its strings. Nor can it be rightly affirmed that when a man is influenced by what are metaphysically termed *motives*, and which are also motives in a physical sense, when considered as due to brain-work, that he is a mere mechanical automaton, or puppet the strings of which are motives. In the philosophical use of the terms *automaton*, *automatic*, *puppet*, as in that of the word *cerebration*, Dr. Carpenter has, in truth, followed thinkers of the hylo-zoic school. Mr. H. G. Atkinson, the co-worker with Miss Martineau in their “Letters on the Laws of Man’s Nature and Development,” was a co-worker with Dr. Engledue; and this is what Dr. Carpenter quotes from their book. “I feel” (say these authors, affirming the fact simply for themselves, be it observed) “that I am as completely the result of my nature, and impelled to do what I do, as the needle to point to the north, or the puppet to move according as the string is pulled. I cannot alter my will, or be other than what I am; and cannot deserve either reward or punishment.”

Now, it is as to these views that I wholly differ from Dr. Carpenter. It seems to me that to have a self-determining power, now operating, now idle,—as men are dreaming or waking, drunk or sober, insane or sane, young or middle-aged,—and all this without a reasonable hypothesis as to whence the power comes and how it ceases, is not only no advance in our knowledge, but is opposed to the first law of both mental and corporeal life, the evolutionary unity of mind and organisation. According to my views, every living organism is an *automaton* in the primary meaning of the word, just because it is living, inasmuch as it is constructed not only so that it shall be able to adapt itself to an external world, but also that the multifarious internal mechanism, whether of the brains or elsewhere, shall be in constant adaptation to each other. What, then, Dr. Carpenter attributes to an energy distinct from the mechanism, I attribute to a mechanism con-

stituted by an energy, and having the express function of inhibiting, or otherwise regulating, acts that are favourable or contrary to the general ends attained by the adaptations of the organism; which are the conservation and well-being of the organism and the continuance of the species of organised beings. Of course, this argument will be objected to by the hylo-zoic school of philosophy as “teleological;” but if it be admitted that life is itself a series of adaptations (as is affirmed by all) it follows logically that there is at least an end *attained* by the working of the mechanism, although there may be no end *purposed* by it. If the lungs and their motor apparatus do not, by their adaptations as mechanism, attain the ends of aeration of the blood and other work, what is the mechanism for? It is thus, also, with the mechanism working in adaptations to ends which constitutes the human brain. Ends are *attained* by its working; but by the same mechanism we are enabled both to know that ends are attained, and also to purpose and desire to attain, and to energize or “conate” for the attainment of desired and purposed ends. This latter endowment—as to the lower desires, sentiments, and conations—animals possess; the *knowledge* of the ends to be attained, and how, and the capabilities which enable man to know and to attain moral and intellectual ends, and to feel correlative desires are, doubtless, more especially human as to their organic bases. But throughout the whole chain of the adaptive phenomena of life, the same energy by which the living mechanism is constructed, is the energy by which organisms energize to ends, and are conscious; and man is enabled to make his mechanism subservient to the attainment of his *purposed* ends. Ends to be purposed must, obviously, be both known and foreseen. Just, therefore, as the mechanism available for knowing and foreseeing is evolved and perfected—of which acquired knowledge, as memory, is the chief manifestation—so the man becomes more free because more knowing and foreseeing. Hence, knowledge is not only a power to do freely, but a means to acquire mental freedom. If this were not so, why do sects seek not only to fix in childhood the knowledge and habits which will govern the future man, but also endeavour to exclude that knowledge which would constitute a freely-acting brain? Clearly, then, to make free men, the child should be taught to use that mechanism by which man is constituted a free agent.

VII.—As to the ordinary metaphysics of the Will, I need hardly say that to discuss “fixed fate, free will, foreknow-

ledge absolute" is no business of the physician. In thus departing from the study of the inexorable realities of life, he would be sure to suffer the fate of Milton's fallen angels, and be "lost in wandering mazes." I may, however, properly say here that I went physiologically over the ground which Dr. Carpenter has taken up as to this influence of "the will" and of attention and suggestion on the hemispherical ganglia and on the body, more than thirty-seven years ago, and arrived then at the same conclusions which Dr. Carpenter reached later and has fully developed in his "Mental Physiology," evidently in ignorance of my published researches. At that date I came to the conclusion, from both observation and experiment, that three deductions might safely be made from mesmeric phenomena as to the relations of Attention and the Will, viz.:—1. That if in certain brain-states the attention be directed, by suggestion or otherwise, to any portion of the body, changes in the circulation and nutrition, or molecular constitution, of that portion result. 2. That the attention may be so directed either voluntarily or involuntarily; and, 3. That for the purposes of deception, or otherwise, various mesmeric and other cerebral phenomena can be induced by the subjects of the experiments volitionally, or as they pleased. These deductions necessarily led to inquiries into the physiology and physiological anatomy of the Will, Attention, &c., and more especially I asked, where is the seat of these processes in the brain? For there the influence must arise and thence be sent to induce at least the corporeal phenomena in question. Now, Gall and his followers had already fixed the cerebral seat of the moral and intellectual will, and of the perceptive and reflective faculties (the intellectual powers of the old metaphysic), and of the moral feelings and sentiments, in the grey matter of the convolutions—the *cerebrum* of Dr. Carpenter. There, also, physiologists who held the hypothesis of the will as a self-determining power, imagined that the will operated, sitting behind the mechanism of thought and act, as a performer sits behind a piece of mechanism. This I mentioned as the notion of Johannes Müller at that date.\* At the same time I discussed the influence of the will on the hemispherical ganglia, but more especially as

\* "Professor Müller conceives the [motor] nerves to be all spread out at their central extremity to receive the influence of the will, and compares them, as they lie side by side, to the keys of a piano on which our thoughts play or strike. (Physiology, p. 686 of Dr. Baly's translation.) This seems to be a favourite idea, as it is repeated by the Professor."—(My essay in *Edin. Med. and Surg. Jour.*, July, 1839, p. 13.)

attention, which latter I distinctly discriminated as being either voluntary or involuntary.\* The views I then held are nearly identical with those which Dr. Carpenter now propounds, in his "Mental Physiology," *passim*; but I have long abandoned them as erroneous. It seems to me that a more correct generalisation can be attained, if we take in the well-established fact that the grey matter of the convolutions is made up of strata or layers of cells, and the probability that each layer has its distinct functions in connection with corresponding layers of the corpus callosum lately discovered. An analysis of the processes named perception, attention, and ideation, both in healthy and disordered brain-states, shews that they are organically distinct, so that each needs to have its corresponding mechanism. And since the acquisition of knowledge and the evolution of "mind" means, organically, evolution of the hemispheres, it is probable that in the higher layers that process takes place by which knowledge is acquired, which I have named *synesis*, and the *substrata* are produced on which knowledge depends organically, as explained in my "Chapter on some organic Laws of personal and ancestral Memory"† to which Dr. Ireland refers. The reproduction of these, directly or indirectly, as ideas constitute reminiscence; and if with that reproduction there be also an act of energy to attain a desired end, that "conation" reaching the consciousness is an act of will organically. Consequently, strength of will depends, other things being equal, on the vigour of nutrition of those convolutions. It seems to me, therefore, that the localisations of Gall, to which Dr. Carpenter still strongly objects, as well as those of Hitzig, Ferrier, and others (all which tend to confirm Gall's views), constitute the most available anatomy of the Reason and the Will, considered as the intellectual powers.

The trophic influence of the convolutions on the muscular system in developing heat and nutrition of muscles, as well as motor energy in acts of willing, is only a part of the work which ideational substrata situate therein do. All those changes in the circulation, secretion, and activities of viscera that coincide with emotions, suggestions, directed attention, and the will, belong to the same class as the volitional, but with this

\* Essay just quoted in Edin. Journal, p. 16, sect. 46, *et seq.*, and my Treatise on the Nervous Diseases of Women (1840), in chapter x, p. 109, headed "The action of the Will and of Internal and External Stimuli on the Hemispherical Ganglia."

† Journal of Mental Science, July, 1875, p. 158, 159.

difference—that, inasmuch as the work done is internal to the organism, there is no perception and no knowledge of the order of events, such as is attained when a man energises to attain an end he desires by the use of his limbs, and can see or perceive that it is attained. Knowing he has a heart, he may, however, by frequent effort, influence its motions volitionally, and may even contract and relax his iris at will. The great trophic centre by and through which the hemispheres thus act in emotions and volitions is probably, according to my researches, the cerebellum. If this be out of gear, as in emotional dreaming all the willing a man may make in his dream-fear and terror will not help him to move a limb or to utter more than a feeble wail.

(*To be continued.*)

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*Observations on the Brain of the Chacma Baboon.* By HERBERT C. MAJOR, M.D., Edin., West Riding Asylum, Wakefield.

An opportunity having been afforded me, through the kindness of Mr. A. H. Garrod, of examining the brain of a fine specimen of the Chacma Baboon (*cynocephalus porcarius*) from the Zoological Society's Gardens, London, I purpose, in the following pages, to record, so far as I may be able, the minute structure of the convolutions in the various parts of the cerebral hemispheres. It will be my endeavour in this inquiry to study the nerve elements of the cortex step by step, and layer by layer, and thus gradually to unfold its structure; to analyse and compare the varying appearances in different situations; and finally, collecting and arranging the facts thus elicited, to place them side by side with those derived from a study of corresponding parts in the human organ, and ascertain, if possible, the relations which exist between them.

One of the largest and most powerful of the baboons, the Chacma, while considerably lower in rank, and having a brain less highly developed as regards its general characters than that of the Orang, Gorilla or Chimpanzee, claims fairly, nevertheless, a place among the higher apes. In it, as compared with the Chimpanzee, the convolutions of the hemispheres are generally less numerous and complex and there is less development of the frontal lobes; and, on the other hand, there is a corresponding increase in the size of the occipitals. The bridg-

ing or annectent gyri, which are conspicuous in man, and which are also to be found to a certain extent in the Orang, are here absent, and the temporo-sphenoidal lobes are less horizontal and more depressed than in the Orang or Chimpanzee.\*

Such, then, briefly are among the most important external characters which have been described as separating the brain of the baboon from that of its more exalted brethren. It is to me a source of much regret that in the present instance I am not able to give an accurate description of the external conformation of the brain, the number and course of the convolutions, and the relative weights of the various lobes—facts which would have added greatly to the completeness and value of my observations. For the most part, this omission has been due to the fact that it is difficult to combine in any single case an accurate and exhaustive study of the general anatomical characters of the brain, without at the same time damaging the organ, and rendering it unfit or unreliable for histological study. Of course, where several specimens are forthcoming, the requisite facts may be readily gathered; but where, as in the present instance, specimens are rare, the difficulty is as I have stated. At present, therefore, I take up the question of histological structure, leaving on one side, but in no way unmindful of, the importance of the questions of weight, development, and convolutionary arrangement of the organ. For in the study of the organ of the mind, and the relation which it bears to individual intelligence, I hold that *quality* deserves the highest place, and second only to it is *quantity*.

Before entering more closely on my subject, a few remarks may not be out of place, with a view of showing the nature and extent of previous investigations in this department of comparative anatomy. The general conformation of the brain in apes, and the arrangement of the convolutions, have been described by Owen, Huxley, Turner, Gratiolet, Meynert, Marshall, and others, names which in themselves are evidence of careful and accurate investigation. Far otherwise is it, however, with the study of the minute anatomy of the nerve elements which enter into the formation of the cortical substance, and the relation which they bear to the corresponding structures in the human organ. A few facts are to be found in the article by Th. Meynert (*Stricker's Human and Comparative Histology*); but these, valuable as they are as

\* "Man and Apes," by St. George Mivart, F.R.S., p. 138, *et seq.*

coming from one of our very best authorities, are still very limited, and do not reach what is wanted, viz., a thorough description of the cortical structure in apes, similar to that which Meynert has been so greatly instrumental in affording in the human subject. I find that Dr. Lockhart Clarke makes the observation that, while recognising with certainty differences between the cells of the convolutions in man and those of some of the larger mammalia, as the ox, sheep, or cat, he could perceive no difference whatever in the case of the ape tribe.\* In his work before alluded to, St. George Mivart argues on the presumption that there are no histological differences between the nerve elements in man and in the higher apes, from the fact that none have been shown to exist, and states the difference to be one of actual mass, "a mere difference of degree and not of kind."† My own work in this direction has till now been limited to the brain in the smaller apes, a study of the cortex in which formed the subject of a graduation Thesis presented to the University of Edinburgh. I may be permitted later on to refer to some of the results I there recorded; but I may say here that, so far as I have been able to ascertain, this essay was the first record of systematic comparison (though, of course, limited in extent) between the nerve elements of the cortex in man as compared with the ape, and, together with the observations before alluded to, forms, I believe, at the present time, the only literature of the subject in this or any other country.

Our position, therefore, is this: that while recognising external differences which distinguish in the most certain manner such brains as that of the Orang or Chimpanzee from that of man, we are as yet baffled in our efforts to penetrate further. We know that the human cerebrum is supreme in size and weight both absolutely and relatively. It has been shown that the proportion which the hemispheres bears to the entire brain mass is greater in man than in the baboon, being about 78 per cent. in the former case, and 70·8 per cent. in the latter;‡ and we know, lastly, that it is by far the richest in the number and complexity of the convolutions, i.e., in the extent of cortical substance. Must it, then, be accepted as a fact that there are no histological differences between them corresponding with the above coarse and universally acknowledged variations? To

\* Maudsley's "Physiology and Pathology of Mind," 2nd ed., p 63.

† *Loco cit.*, p. 149.

‡ Stricker's *Hum. and Comp. Histology*, p. 421.

me it appears that all analogy and numerous facts combine to render such a condition in the highest degree improbable. The observations of Beale,\* Clarke,† Meynert,‡ and Van der Kolk show that in such animals as the sheep, cat, dog, and rabbit, the nerve cells of the cortex differ very decidedly from those in man, and my own experience is quite in accordance with theirs. In some of the apes, again (I believe the smaller ones) Meynert has observed a peculiarity in some of the nerve cells in the occipital region, as compared with the structure in the human brain, to which I shall have occasion to refer later. Lastly, in my own researches before alluded to, which were for the most part directed to a description of the cortex in the occipital regions in the *smaller apes*, notwithstanding great general resemblance of structure to that in man, I was able to show by actual measurement that the size of the nerve corpuscles was less than in the human subject.

With such facts before us, it must seem, I should think, in the highest degree probable, that in the highest of the ape family certain variations from the human structure should still be present—differences, it may be, so slight as to be nearly unappreciable, but still differences of the widest significance and importance. It may be said that all analogy and *à priori* arguments must give way if opposed to actual observation and experience; but in reply to this, the arguments of Huxley appear to me conclusive. There is a limit to our powers of observation. Great as is the perfection attained by modern instruments, there may be points too delicate for their solution. And yet it is certain that in such minute differences, just as in trifling imperfections in delicate pieces of mechanism, may rest the answer to the great question at issue. To what does the human brain owe its superiority as the organ of mind, as compared with that of the ape? Is it merely that its mass is greater, and that, as a consequence, the nerve elements which we know to be connected with the manifestation of intellectual processes are more numerous, while similar in other respects? Or, is there something more than this—something in the *structure* of the nerve elements, in their size, their connections, or in their chemical composition, which renders them fit to sustain the highest functions in the

\* Proceed. Roy. Soc., June, 1863.

† Proceed. Roy. Soc., Sept., 1863.

‡ Stricker's Hum. and Comp. Histology.

human economy, or adapts them for the mean capacity of a Baboon or a Chimpanzee?

In comparing the structure of the brain of the Chacma with that of the human organ, it will be my endeavour to lay aside all theory and preconceived ideas, and to trace, with the greatest care, step by step, and layer by layer, the corresponding nerve elements in both. The parts of the brain selected for comparison will comprise, generally, the convolutions forming the vault of the hemispheres, and more especially the ascending frontal and parietal convolutions and the tips of the occipital lobes, as being the parts the structure of which is most familiar to me in the human organ, and, therefore, best adapted for purposes of comparative study. In the comparative histology of the cortex of the brain, the minute structure of which is liable to infinitely numerous, though slight, variations, even at points situated close to each other, it is very necessary to have certain definite landmarks, so to speak, if we would avoid hopeless confusion and erroneous conclusions.

The method adopted for the display of the brain tissue has been the same throughout the course of the investigation, and is that so well known as Clarke's method. The portions of brain were first hardened in chromic acid, or Müller's fluid, and thin sections made in different directions. The sections were then stained with logwood or carmine, dehydrated in alcohol, rendered transparent by oil of cloves, and finally mounted in Canada balsam. Notwithstanding some serious disadvantages of this system, due for the most part to the too great transparency of the tissue which it induces, the view of the nerve cells which it affords is very complete, more so, in my experience, than by any other method, and hence its great utility in the present inquiry.

The sections of human brain on which I have relied as standards of comparison were obtained from two presumably healthy young men, in both of whom death was the result of accident. The contrast presented by these two brains, as compared with cases where death has been slow and lingering, is very striking, and furnishes abundant evidence of this most important fact, demonstrated first, I believe, by Dr. Batty Tuke, of Edinburgh.

It would be too great an encroachment on valuable space, as well as unnecessary, to give the *complete* record which is now before me of the structure presented by the cortex of the brain of the Chacma. In many respects such structure,

so far as could be made out by careful and prolonged investigation, is identical with that present in the human organ, and to enter on a full description under such circumstances would only be to reproduce, more or less closely, what has been said by others with respect to the human brain. While, therefore, it will be necessary for me to survey the various cortical layers in the Chacma, the description in many instances will be very brief, my object being to limit discussion by confining myself, chiefly, to points in which differences appear to exist. Under the following heads, it will be my endeavour to carry out the comparison, and it is hoped that the simplicity I shall endeavour to secure may enable the description to be followed by others besides the practised histologist.

I shall consider in the baboon, as compared with the human structure—

I.—The number and general appearance of the cortical layers.

II.—The general characters of the nerve, and other constituent elements of the strata. The latter will include a consideration of—

1st. The intimate nature and structure of the nerve cells.

2nd. The size of the corpuscles.

3rd. The number of the cell processes, and the nature and extent of the connections.

III.—The vessels and the white medullary substance.

I.—Now, with regard to the first of these points, viz.: The number and appearance presented by the cortical strata, I wish to state at once, and very decidedly:—1st, that the number in the Chacma corresponds exactly with that in man, in the frontal and parietal, as well as in the occipital lobes; 2ndly, that, not only are the general features and appearances of the layers, as seen with a low power, closely similar in both cases, but even the modifications of structure, which in man are found in the occipital regions, as compared with other parts situated more anterior, are equally plainly discernible, and give rise to similar appearances in the Chacma. It need scarcely be said that this is a most important fact to start with, one which must have some deep import, and which ought to be kept well in view. To the practised observer, the cells of the cortex are not a confused mass of bodies, but the layers which they form have definite characters, by which any one of such layers, even if isolated, may be distinguished with almost unerring certainty; and, still

more, may often be referred to the portion of the hemisphere in which it was situated. Not without a wise purpose are the cells and strata thus differentiated and arranged; but whatever the significance of the fact, it is one which exists in the ape equally with man, while in both its import is at present quite inscrutable.

II.—I now pass to the second point selected for consideration, viz.: the general characters of the nerve elements in the various strata. This will involve, to a certain extent at least, a reference to each layer in detail; but the description may be greatly condensed, and still, it is hoped, be readily followed, by a reference to the accompanying plates, which represent, in the Chacma baboon, portions of the various layers in succession with their prominent peculiarities of structure.

The appearance presented by the corpuscles situated in the *first layer* of the cortex are represented in Fig. 1, which also shows the relation of the pia-mater in immediate contact with the upper surface of the stratum. It will be seen that the corpuscles, which are few in number, present three varieties. There are, in the first place, some which are round or oval in form and containing three small granules, but are destitute of branches. Others of the corpuscles, again, have two or three branches, which present distinct anastomoses with similar bodies situated in the pia-mater, while, also, those in the latter membrane send down branching processes, some of which join other cells, while others become lost in the general matrix of the layer; and, thirdly, there will be noticed a corpuscle the peculiarity of which consists in its large number of thread-like processes. This is one of the so-called connective tissue corpuscles of Deiter. While of rare occurrence in this situation, there can be no doubt of the presence of these bodies, and of the almost numberless connections which they have with each other, as well as with the vessels. Now, all the corpuscles of the layer may, I believe, be referred to one or other of the groups above described, and all, I think, belong to the *connective tissue* system. The *intercellular matrix* of the layer (which in this instance has not been delineated with the object of rendering the connections actually traced between the cells the more distinct) is made up of a meshwork of minute fibrils which are largely derived from the corpuscles above described and a fine, almost homogeneous, substance which everywhere pervades the cortex, and which, by some, has been attributed to post-mortem changes. Finally, nerve fibrils pass in all directions, in their passage upwards from

the cells beneath. I may in this place remark, in passing, that the connections above described and figured as existing between the pia-mater and the brain substance, and which are similar in man, have not, I think, been generally recognised, and, as it appears to me, may probably play an important part in the formation of *adhesion* of the pia-mater which takes place under certain morbid conditions.

The closely arranged and small cells constituting the *second cortical layer* in the frontal and parietal regions, are represented in Fig. 2. In size, they average about  $\frac{3}{250}$  millimetre in length, and are distinctly pyramidal in form. They give off processes which run in various directions, the one from the apex being directed outwards, while those from the base pass horizontally, or backwards. The upper surface of this layer is well defined, but inferiorly it passes somewhat gradually into the succeeding stratum.\*

The *third layer* in the frontal and parietal lobes is the broadest of all, and contains the largest cells in greatest number. The majority average from  $\frac{3}{250}$  to  $\frac{4}{250}$  millimetre, but a few, as will be stated later, are much larger. Their general form is very distinctly pyramidal. The apex process is directed outwards, those from the basal angles pass more or less horizontally, while from the centre of the base there runs, almost invariably, a very distinct process directly backwards. The general characters above described are represented in Fig. 3, where also are shown the clear spaces surrounding the nerve cells, and which have been considered by Obersteiner as lymphatic spaces. But while the above forms of nerve-cell is most common, others may be seen not only of larger size but different in character and appearance. In them the nucleus is of very large size, round or oval in form, faintly stained by the colouring fluid, and contains several granules. The surrounding protoplasm is hazy and ill-defined in appearance, usually oval in form, and the branches are few in number and indistinct. These bodies will be again alluded to in connection with other layers in which their number is greater than in the third, but wherever seen, their peculiar characters enable them to be recognised at once, so different are they from the others. In the deepest part of the third layer, just before it passes into the fourth, are seen, at intervals, pyramidal cells of very large size (Fig. 5), some measuring as much as  $\frac{10}{250}$  millimetre long by  $\frac{5}{250}$  millimetre broad. These are rare, however, as compared with the others, and it is noteworthy that their branches

\* Compare Meynert, *loco cit.* p. 234.

are not numerous. Smaller nerve cells and neuroglia corpuscles complete the cell element of the third layer, and all are imbedded in the general connecting framework or neuroglia.

In the *occipital* lobes there is a very distinct and highly characteristic variation from that above described, with regard to the second and third layers. Here the distinction between the outermost nerve-cells and those situated deeper, is not sufficient to constitute distinct layers, but they form a rather broad band of pyramidal bodies, varying little in size, and having an average length of about  $\frac{2}{3}$  millimetre. It is to be observed, however, that in this region the large hazy corpuscles are found more abundantly than in the corresponding layers of the other lobes, while their size does not diminish, as is the case with the deeply stained pyramidal bodies.\*

Succeeding the above, comes the *third cortical layer* of the occipital region—a layer which, in its position, corresponds with the deepest portion of the *second* layer in the other lobes, but from which it differs very decidedly. It extends in the form of a pale and somewhat narrow band, parallel with and immediately preceding the dark fourth layer. Its cells, it will be observed (Figs. 6, 7) are few in number, the most prominent being the pale, large-nucleated variety, while the well-defined pyramidal bodies are both small and few in number. It is for this reason that the region is pale, and contrasts strongly with the strata situate on either side of it. It will thus be seen that, whereas in the frontal and parietal regions the second and third strata are both made up of pyramidal bodies the distinction between them being due to the variation in size and number, in the occipital region the pyramidal bodies form one layer, the *second*, and following this is the pale third stratum last described. Thus, to put the relation in a tabular form:—

Frontal and Parietal.		Occipital.
1st layer.	Same in both.	
2nd layer.	Small pyramidals (narrow band).	Small pyramidals (broad band).
3rd layer.	Large pyramidals (broad band).	Large pale bodies (narrow band).
4th layer.	Same in both.	

If the above arrangement is understood, then the great distinction between the arrangement of the layers in the occipital region, as compared with the others, has been mastered.

*The fourth layer* (fig. 8), the most distinct and character-

\* Meynert, *loco cit.*, p. 391.

istic of all, varies but very slightly in the different regions of the brain, and with the aid of the plate, its description may be summed up in a few words. The cells composing it are of small size, and remarkably regular in appearance. For the most part pyramidal in shape, they are closely arranged in the form of vertical rows or bands, between which run in the most regular manner bundles of fibrils in their passage downward from the layers above. In size the corpuscles average from  $\frac{1}{250}$  to  $\frac{2}{50}$  millimetre, but are slightly smaller in the occipital region than in other parts, while on the other hand, in the occipital lobes, the vertical bands which they form are closer, and the bundles of fibres more compact than in the frontal and parietal regions. Occasionally, as is seen in the drawing, the larger pale corpuscles are found, but in this layer their presence is quite exceptional.

*The fifth layer* (Fig. 9) contrasts very strongly with the preceding, both in general appearance and in the character of the corpuscles which enter into its formations. The latter are usually of the pyramidal type, but are of small size, and hence the pale appearance which the layer presents. In this situation, however, more frequently perhaps than in any other, very large nerve cells are found. Usually, these have the characters of the large nucleated, pale bodies, already frequently referred to, but they sometimes resemble closely the large pyramidal cells before described in connection with the *third* stratum in the anterior portions of the hemispheres. Their number, however, is not considerable. Some distinction must be drawn with regard to the characters of the cells of this layer in the occipital region as compared with the anterior lobes. In the occipital region, the fifth layer (as is the case with nearly all the others) is most sharply defined, and very closely resembles the *third* stratum in the same regions. I find, also, that the pyramidal cells are rather smaller, while the large, faintly-stained bodies are more numerous than in the corresponding layer in the anterior parts of the hemispheres.

*The sixth layer* (Fig. 10) remains to be described; and while its general characters, in all the lobes, agree pretty closely, yet in different parts of the same convolution it is subject to regular and decided modifications, which must be described. If the layer be examined as it runs up the side of a convolution, the cells, almost without exception, will be found to be closely arranged, of pyramidal, though somewhat stunted form, and deeply stained by the colouring fluid, while the

direction of their apices is very regularly *outwards*, i.e., at right angles to the plane of the stratum. But if the layer be traced to where it turns round at the bottom of a sulcus, the cells are seen to be somewhat spindle-shaped, and are no longer vertical, but horizontal, or, as I am in the habit of describing the position, *reclining*. It is owing to this change in the direction of the long axis of the cells, which thus take up less *vertical* space, that at the bottom of the sulci, the diameter of the layer is very decidedly diminished. And finally, in that part of the layer which corresponds to the superior free surface of the convolution, the cells are drawn out in the form of long spindle-shaped bodies, running parallel, which, in consequence of their *vertical* direction, considerably increase the thickness of the stratum, and give rise to an appearance found nowhere else throughout the cortex (Fig. 10). To repeat—at the bottom of the sulci the cells are horizontal, somewhat spindle-shaped, and the layer which they form is at its narrowest. Running up the side of the convolution, the cells are vertical (*quoad* the plain of the stratum) pyramidal, and the layer is thicker. Lastly, passing round the superior aspect of the convolution, they are drawn out in the form of long vertical spindles, and the layer is at its thickest.

It is a difficult and uncertain matter to venture on an estimate of the size of the corpuscles in this layer, it being, as I have shown, so variable, but they are certainly larger and more numerous than in the preceding stratum, are of a deep colour, from the presence of pigment, and are deeply stained by the colouring fluid.

With regard to the structure of the *neuroglia*, little remains to be said. I have already described it as consisting of a delicate meshwork, made up of the finest processes of nerve and other corpuscles, and a delicate homogeneous matrix. In this state it extends throughout the cortex, supporting the cells and vessels. It also contains pale nuclear bodies, like those already described and figured in connection with the first layer, and which are known as the corpuscles of the *neuroglia*.

Turning now to the question, whether, in the various cortical strata of the human brain, the *general characters* and appearance of the cell-element agree with those above given, as present in the Chacma baboon, the answer must be a decided affirmative. Let any layer in cortex of the Chacma's brain be chosen, the characters I have given of the nerve-elements

composing it would enable the corresponding stratum in the human organ to be selected. Thus, a second great fact has been arrived at; viz., that in the brain of the Chacma and in man the general character and appearance, *i.e.* form and relative number, of the cell-element in the various layers, show no variation.

The object of search, if to be found at all, must evidently be sought deeper.

1.—With the highest powers at my disposal, I have failed to detect any difference in the intimate construction of the nerve cells in the baboon, as compared with that in man. In both cases the nucleus, the nucleolus, and the mass of protoplasm forming the body of the corpuscle appear to me to be alike in their nature, as they are, also, in appearance. At present, however, I cannot venture on more than this guarded statement, not having used a higher objective than the one-tenth Hartnack.

There is a point, however, with regard to some of the cells in the Chacma which must not be passed over, and which, indeed, might well have been stated sooner. While the fact remains true that in the various layers of the cortex in man and in the baboon the general characters of the cell elements agree, it is nevertheless also true that, in the present case that form of cell frequently described and figured as pale in colour, hazy in outline, and having large nuclei, is more common in the baboon than in man. But while this is the case, I cannot, without further experience, venture to lay it down as a point of general distinction. Nerve cells in the course of their development and growth undergo changes, and it may be that the condition is accidental; for, as before stated, the form of nerve cell in question is not by any means absent in man. Nevertheless, it is possible that the point is one of much importance, although at present it is very obscure; and, at any rate, it is worthy of close attention and further observation.

2.—There is, perhaps, nothing in comparative histology of the brain more difficult to arrive at than an accurate estimate of the size of the various corpuscles. It cannot, indeed, be otherwise, when the vast multitudes present and the impossibility of measuring even a small proportion of them are considered. It is for this reason that, while I have given measurements, and consider them necessary as furnishing a general idea of the dimensions which the corpuscles in the baboon possess, when the question is one of *comparison* be-

tween them and the corresponding bodies in man, and involves minute differences, I rely more for a true verdict on the judgment of the eye, educated and trained by long experience than upon such measurements. Now, in none of the cortical layers, *with one exception*, have I been able to satisfy myself that in man and in the baboon differences in the size of the cells exist. That exception is the *second layer* in the frontal and parietal regions. I am confident of the fact that, while in the baboon in these situations cells are occasionally seen quite as large as, or even larger, than in man (Fig. 5), still such bodies are rare, and it may be laid down that the number and general size of the large nerve cells, which constitute what has been called the *formation of the cornu ammonis*, predominate in man. There can be no doubt of the importance of this fact, which points, I think, to the supreme position, so to speak, of the cells in question. While by no means disposed to lay down any necessary connection between size of cell and elevation of function, I cannot but think that the view above taken receives no uncertain support from other facts. Let it be remembered that it is in the anterior portion of the cerebral hemispheres, which I am content to receive, without doubt, as the parts in which the highest functions of the organ are performed, it is here, I say, that the large cells referred to are found. Posteriorly, they are quite exceptional. Let the fact be noted that, as we proceed downwards in the scale of development, it is, I have observed, these cells which vary most distinctly from the corresponding bodies in the human organ. And it is in these cells, lastly, that degenerative changes first occur when age is beginning to do its work, and *pari passu* the intellect is failing.

3.—I now pass to consider the *number of processes* possessed by the nerve cells, and the extent of their connections, which forms, as I believe, the most important of the questions under present discussion. A careful study of the subject, and a close comparison of numerous sections, have led me to the conclusion that in man *the number of the cell processes, and, as a consequence, the extent of their connections, is greater than in the baboon*. It is impossible, I consider, to over-estimate the importance of the above conclusion, if correct, or its influence on questions hitherto in obscurity. But because of its importance and far-reaching interest, is it therefore the more necessary to examine well the grounds on which it is based, and endeavour to realize the exact state of the case. Let me in the first instance say, that my remarks apply mainly to

the large pyramidal bodies of the second layer, for at the present moment I am not prepared to include the smaller corpuscles of the other strata. It need hardly be said that in such a question as the present the difficulty is great, and the sources of fallacy are considerable. Sections of the same region may vary considerably with regard to the number and distinctness of the cell processes, according to the success and delicacy of the preparation, and not from any inherent variation of structure. Again, as before stated, the number of the corpuscles is so great that only a very minute proportion can be studied, and the connections estimated. But with these difficulties fully in view, my conclusion in the present instance is as I have stated above. I base the conclusion—1st, on actual observation. I find that in man the branches of the large pyramidal cells are generally more numerous than in the baboon; and not only so, but they branch and rebranch in a far more complex manner than I have been able to observe in the latter (Fig. 11). I believe that in man, owing to the above fact, the intercellular matrix is more largely composed of fibrils than in the baboon, so that Beale has been led to deny the presence in the matrix of any other constituent than a dense plexus of minute fibrils,\* and, indeed, in the human organ such often appears to be the case, but not in the baboon.

It may be well now to inquire what collateral evidence may be advanced in favour of or against the proposition above stated, for while I am convinced of the truth of my position, there are, as before stated, fallacies and difficulties, and further, the present is but a single case.

In the human foetus at the eighth month I have observed that the cells of the cortex have universally the form and appearance of round nuclear bodies, without any indication of branches or connections. It is not till late in life, when the functions of the cells are called into activity, that branches and processes make their appearance. Long before the present considerations framed themselves in my mind, the fact was familiar that in some of the lower animals, such as the rabbit, the cells, while differing from those in man in many respects, appeared to be decidedly less rich in branches. Lastly, in the process of atrophy of the cells in old age, we know that loss of some of the branches is one of the earliest and most constant changes. Do not the above facts render it probable that there is a relation between the functional

\* Proceed. Roy. Soc., June, 1863.

activity of the nerve cells and the number and complexity of their anastomoses? And, if so, is it not in accordance with what would be expected, that in man the arrangement should be most complex, and that, passing downwards in the scale of development, it should become more and more simple? *A priori* reasoning, therefore, it seems to me, as well as the facts now adduced, points in the same direction; and it remains to be seen whether further observation and experience will confirm my conclusions.

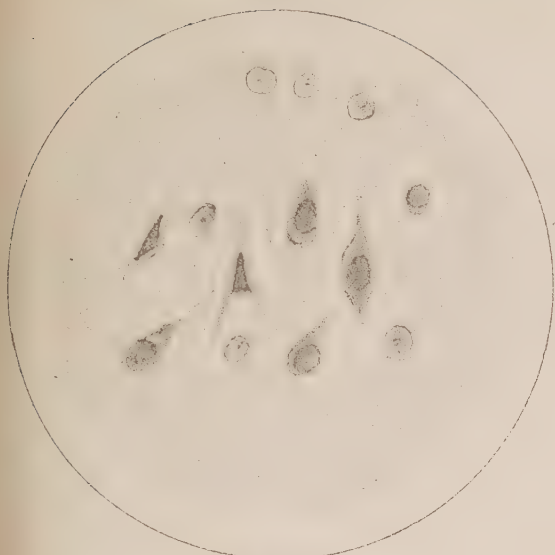
III.—With regard to the structure of the white medullary substance of the brain and the vessels in the baboon, I can find in neither case any variation from that found in the human organ. Without doubt, in man the *quantity* of the white matter predominates; but further than this there is no difference which I can detect.

In bringing these observations to a close, I do so with the full consciousness of their imperfection. There are very many points of great interest which I have not even named, as being at present beyond my reach, and which, therefore, would only have complicated and obscured the others. Nevertheless, if I am right in the results I have indicated, and if my observations be confirmed by further investigations, then at last, I venture to think, that some light is breaking out on this hitherto obscure and unknown region; some knowledge acquired, not vague and uncertain, but definite and secure, and some progress made in the right direction.

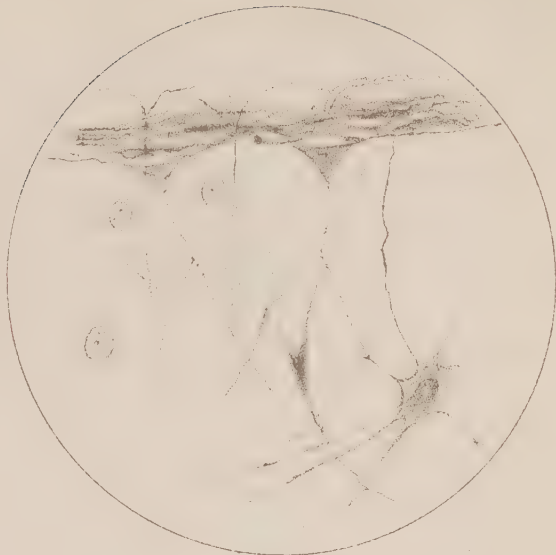
#### EXPLANATION OF PLATES.

- Fig. 1. (Chacma Baboon).—First cortical layer of the brain, showing the corpuscles, their connections, &c.,  $\times 450$ .
  - Fig. 2. (Baboon).—Second cortical layer (ascending frontal convolution),  $\times 450$ .
  - Fig. 3. (Baboon).—Large pyramidal cells of the second layer of the frontal lobe (cornu ammonis),  $\times 450$ .
  - Fig. 4. (Baboon).—Second layer (occipital),  $\times 450$ .
  - Fig. 5. (Baboon).—Largest cells of second layer (frontal),  $\times 450$ .
  - Fig. 6. (Baboon).—Third layer (occipital), showing occasional large nerve cell,  $\times 450$ .
  - Fig. 7. (Baboon).—Third layer (occipital), showing the ordinary cell elements, &c.,  $\times 450$ .
  - Fig. 8. (Baboon).—Fourth cortical layer,  $\times 450$ .
  - Fig. 9. (Baboon).—Fifth layer (occipital),  $\times 450$ .
  - Fig. 10. (Baboon).—Sixth layer (parietal),  $\times 450$ .
  - Fig. 11. (Man).—Cells of cornu ammonis, showing the numerous branches and connections,  $\times 450$ .
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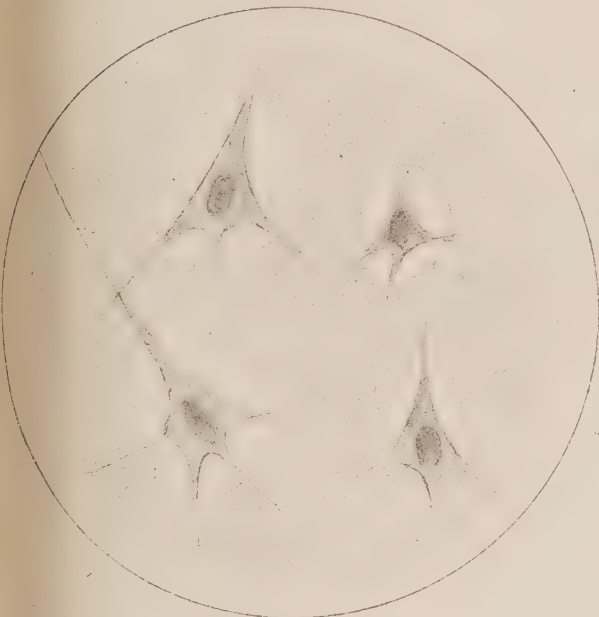
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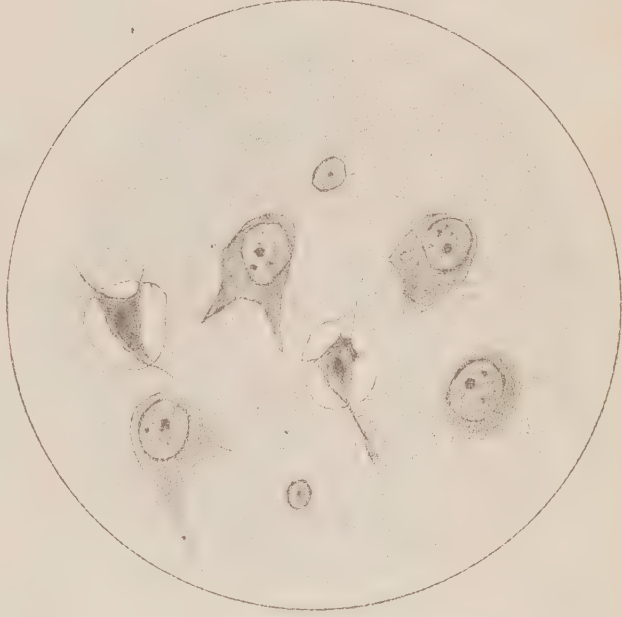
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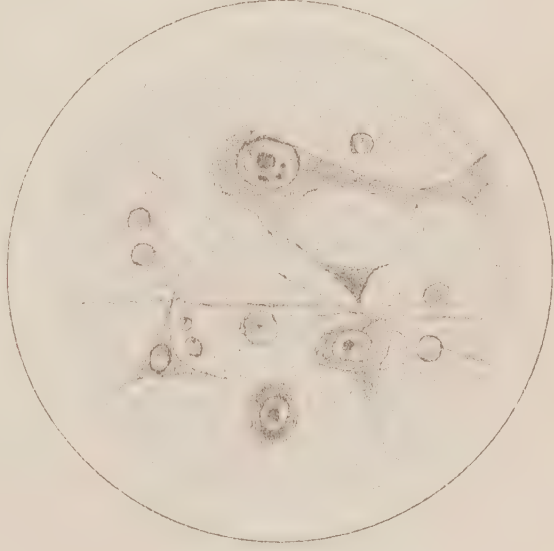
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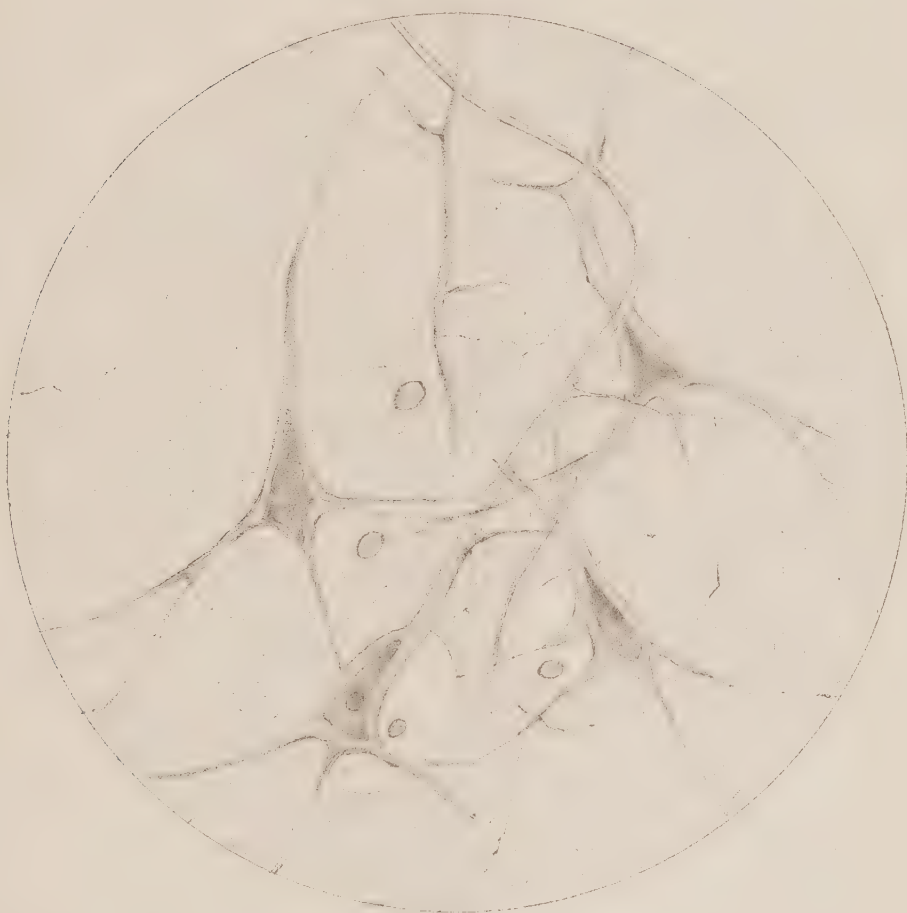
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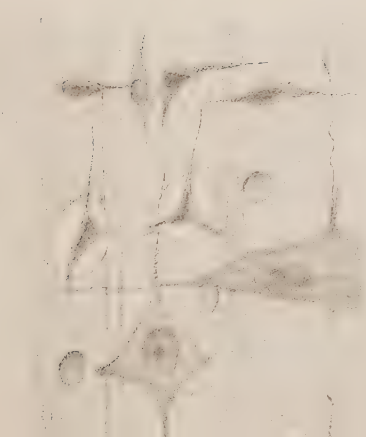
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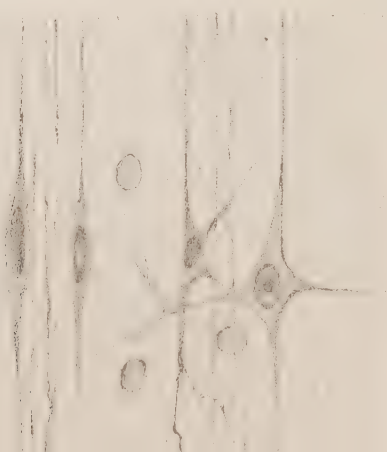
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*Mind in Plants.* By W. LAUDER LINDSAY, M.D., F.R.S.E.,  
F.L.S.

In studying, during the last five years, the phenomena of *Mind in the Lower Animals*, I have encountered as great difficulty in drawing any definite or definable Psychical Line of Demarcation between *Plants* and the Lowest Animals as between the Higher Animals and Man. In other words, it appears to me that *certain attributes of mind, as it occurs in Man, are common to Plants*. The only alternative is the omission from our conceptions and definitions of Mind of certain phenomena common to plants with all classes of animals, including man—those, namely, that do not involve what we distinctively call *consciousness*. But the difficulties of such an elimination seem to me insuperable.

What I hold to be a certain *Community of, or in, Mind between Plants and Animals*—in so far as concerns its lower or rudimentary manifestations—is, I think, of sufficient interest and importance to deserve special study in connection more particularly with the surprising results recently recorded by Naturalists as to the behaviour, under certain circumstances, of *Insectivorous or Carnivorous Plants*.\*

My present paper is intended simply to indicate to those who may have the necessary time to devote to such an inquiry, and who are favoured with due opportunities of residence or otherwise, some of the physiologico-psychical bearings of the subject of Plant-mind. What I now offer is, not an exhaustive essay, but a mere sketch or outline, the details of which may be filled up by the reader with the aid of the most recent works on Physiological Botany—especially those of Germany.†

In my own inquiries on the subject of what has been, by various authors, described as “*Instinct*” in Plants—inquiries which have arisen, in consequence of my non-access in a country residence to the latest works on Vegetable Physi-

\* As described (*e.g.*) by—

(1.) Darwin: “*Insectivorous Plants*,” 8vo., illustrated, London, 1875.

(2.) Hooker: Address on the same subject, before the British Association at Belfast, 1874, and reported at length in “*Nature*,” for Sept. 3, 1874.

(3.) Balfour (Dr. Thomas A.G., of Edin.), in the “*Transactions of the Botanical Society of Edin.*,” for 1875; as well as in the “*Garden*,” for Aug., 1875, and in “*Chambers’s Journal*,” for Aug., 21, 1875.

† For instance (1) the English translation of Sachs; or of (2) Le Maout and Decaisne; (3) the first vol. of Brown’s “*Manual*,” or (4) the larger *Manuals* of Professor Balfour.

ology—I have met with no assistance from British Botanists, who are, for the most part, mere collectors and nomenclators of plants, or rather of new forms thereof—real or supposed. The only one of them who took the trouble, indeed, of even replying to my queries was Prof. Thiselton Dyer, of Kew, who wrote me in May, 1875:—“*Instinct* in Plants appears to me an altogether meaningless expression. The most recent allusion I have met with to it is in ‘Observations on the Phenomena of Plant Life,’ by W. S. Clark, Boston, U.S.A., 1875.” Just as in the case of animals and of man himself, however, until a better term is introduced, *Instinct* is a convenient designation for a group of phenomena usually considered mental, or, at least, associated with our ideas of mind, and which cannot as yet be assigned to what we call *reason or intelligence*.

There is ground to fear that few of our Botanists are sufficiently acquainted with, or devoted to, Vegetable Biology or Physiology to be capable of dealing with phenomena of such a kind as those which, in plants, appear to belong to the category of *mind*—unless and until that comprehensive term be redefined so as to be applicable exclusively—should this be possible—to man or to animals. Moreover, some Botanists are influenced, apparently, by that most contemptible form of ignorance and bigotry which refuses to believe, or even to examine, facts, or to accept words, names, or phrases that seem to militate against their baseless religious preconceptions and misconceptions. They have acquired or assumed, as an article of their creed, that Mind is a prerogative of man alone; and hence they scout the very idea of its occurrence even in other animals, and far less, therefore, in plants. Unfortunately, this kind of error is not confined to Botanists. It is almost incredible to what extent such a form of religious intolerance and fanaticism prevails in the present day, even among persons of the highest education and social or professional position: among, for instance, the teachers of our youth, and the leaders of public opinion, in our Universities.

It may be desirable, in the first place, to point out that there is no *a priori* improbability that Plants possess certain characters of Mind in common with animals. They possess, in common many other physiological functions—some of them hitherto or long regarded as peculiar to animals. These—

I. *Concomitants of Mind, as it occurs in Animals—which are nevertheless, common to Plants*—include the following functions or phenomena:—

1. Respiration.
2. Circulation.
3. Nutrition.
4. Digestion—of animal food.
5. Secretion : including a solvent juice resembling the gastric.
6. Absorption.
7. Luminosity.
8. Evolution of heat.
9. Presence of electric currents.\*
10. Sleep.
11. Exhaustion : with reinvigoration after rest.
12. Spontaneous movements.
13. Same kinds of Diseases.
14. Same influence of atmospheric or gaseous Poisons.
15. Same results of chemical or mechanical Irritation.
16. Same effects of light and darkness, and of heat and cold.
17. Contractility—analogous to muscular.
18. Heredity.
19. Mimicry.

It would be improper here to do more than merely refer to some of these phenomena, *en passant*. For details the reader is referred to the various botanical and other works quoted or mentioned in the text or foot-notes.

Quite recently Prof. Leidy, in a paper on the "Moving Power of Diatoms, Desmids, and other Algæ,"† has shown how this power of *spontaneous or automatic movement* enables them, when mixed with mud, to extricate themselves and rise to the surface. He describes them as very active—gliding hither and thither. These active movements, are, however, more familiar in the Zoospores of Algæ and Lichens; and they occur also in the Bacteria, which figure so prominently in current discussions regarding Spontaneous Generation and the Germ-theory of disease. *Solar heat and light*—or their absence—artificial as well as natural heat, light, and darkness—exercise the same sort of influence over plants as on animals.

Nearly twenty years ago I showed—especially in regard to Cholera—that plants, and animals including man, are equally subject, *mutatis mutandis*, to all atmospheric influences—

\* As demonstrated more especially by Prof. Burdon-Sanderson, for instance, in his "Note on the Electrical Phenomena which accompany irritation of the leaf of *Dionæa muscipula*," in the "Proceedings of the Royal Society," No. 147, 1873 : which phenomena I had the pleasure of seeing for myself, when he showed them before the British Medical Association at Edinburgh, in August, 1875.

† Read to the Academy of Natural Sciences of Philadelphia, in September, 1874, and reported in "Nature," for June 3, 1875, p. 100.

healthy or morbid, including the Epidemic ærial Poisons of whatever nature.\* In other words, they all alike are subject to virtually the same *epidemic diseases*. An admirable series of articles on Vegetable Pathology will be found in the "Gardeners' Chronicle" for 1856, by the veteran distinguished Fungologist—the Rev. M. J. Berkeley. He discourses, for instance, on the "languor and decrepitude" of trees.

He also points out the similar effects of *poisons* on plants and animals. Certain poisons destroy both the irritability and lives of so-called "sensitive" plants; or this irritability may be suspended by *anæsthetics*—by the same means, that is, by which stupor is produced in animals. Irritability, therefore, is a property only of health, or of healthy tissue. In Dr. Thos. Balfour's experiments on *Dionæa muscipula*, chloroform, dropped on a leaf-hair, caused immediate contraction, and closure of the leaf—or, in other words, a *chemical* excitant or irritant produced precisely the effect of a mechanical one. Not only chloroform and ether, but opium and quinine produce the same kind of effects in or on plants and animals. *Narcotic and acrid poisons* arrest motion in plants. Brown points out the effects of poisonous gases.† "Darwin has somewhat startled us by the announcement that, by puncturing a particular part [of the *Dionæa muscipula*], he has succeeded in producing a kind of *hemiplegia*, or one-sided *paralysis*.‡

The *irritability* of the hairs of *Dionæa* is impaired or exhausted by frequent or excessive stimulation. Exhaustion is the result of repeated excitation.

The occurrence of Mind in plants is not, however, a mere matter of probability, possibility, or surmise. Plants exhibit, among others, the following phenomena, which, in man, are inseparably associated with Mind, if they are not regarded as—

## II. *Elements or Constituents of Mind—as it occurs in Man and other Animals.*

1. Sensation, Common: including Sensitiveness and Irritability, or Excitability; Feeling.
2. Excito-motor, Sensori-motor, Irrito-motor, Reflex, or Automatic, action.

\* (1) "Influence of the Cholera Poison on the Lower Animals and on Plants." Clinical Notes on Cholera: Association Medical Journal, 1854.

(2) "Suggestions for Observations on the Influence of Cholera and other Epidemic Poisons on Plants." Proceedings of Botanical Society of Edinburgh, 1856.

† "Manual of Botany: Anatomical and Physiological," Edinburgh, 1874, p. 257.

‡ Dr. Thomas A. G. Balfour, in "The Garden," for August, 1875.

3. Memory, Organic.
4. Consciousness.
5. Instinct.
6. Sympathy, Preference, Predilection or Partiality, Liking or Attachment, with their opposites.
7. Antipathy or Aversion.
8. Choice or Selection; adoption of an Alternative.
9. Volition or Will.
10. Recognition and Rectification of Error.
11. Power of Adaptation, or Accommodation, to circumstances. Including adaptive movements; appropriateness of behaviour, action or conduct; general adaptiveness or adaptivity.
12. Power of avoiding or Overcoming mechanical Obstacles or difficulties.
13. Purposive action: use of means to an End.
14. Sense of Life.
15. Polarity, or Sense of Direction.\*
16. Individuality and Eccentricity.
17. Knowledge of Consequences.
18. Judgment, Discrimination, or Sense.
19. Profiting by Experience.
20. Spontaneity of Effort or attempt: Repetition thereof: and Failure.
21. Investigation and Experiment. Testing or trial.
22. Desire, Longing, or Appetite.
23. Use of Natural and Artificial Tools.
24. Calculation or Measurement of distance or space.
25. Patience.
26. Perseverance—including Resolution or Resoluteness.
27. Energy or Activity: with their opposites, Slowness, Awkwardness, Indifference, Apathy, Lethargy.
28. Caution.
29. Acquisition of Knowledge, and the suitable application thereof.

It is generally admitted that Plants possess, what is called by physiologists "*common sensation*," identical with, or resembling, that which exists in the skin and other parts of the human body to which the sensory nerves are distributed: which sensation is excited by ordinary mechanical or chemical stimuli. In other phraseology, plants are endowed with certain of the "*sensations of organic life*." This power or property of Sensation includes sensitiveness or susceptibility to atmospheric changes or influences—just as in animals. Hence the opening or closure of leaves or flowers at night, or before rain. Hence the *prognostication of weather-change*

\* *E.g.* In the so-called "Compass-plant." Vide Brown, "Manual," p. 562.

by hygrometric or other Plants, such as the Pimpernel.\* But the phenomena of Irritability render it probable that certain plants, at least, possess a special sense of Touch; and some sense or senses that take the place of those of smell, vision, and taste. Or, how else do carnivorous plants learn that digestible food is in their power or in their neighbourhood? For it is by no means necessary to such knowledge that food comes into mechanical contact with the plant-surface. No doubt plants may, and probably do, possess—as do the lower animals, and man himself—certain *unknown, or unexplained faculties*—powers, of the nature of which we at present know little or nothing, and which may even belong to the category of the *unknowable*. Using the term in its physical sense, plants possess various shades of keenness and bluntness of *feeling*, or sensitiveness. Under certain circumstances—natural, or artificial—they exhibit various degrees of Insensibility, Insensitiveness or non-sensitiveness; *e.g.* to irritation, or the influence of stimuli—mechanical or chemical.

Now, it is either extremely difficult, or altogether impossible, to *dissociate sensation from mind, intellect, or consciousness*. Professor Bain thinks that “sensation without *intellect*, is a mere abstraction. It is never realised in fact.”† “We cannot suppose the existence of mere *sensation*, without supposing that there is something more”—says the late Sir Benjamin Brodie in his “Psychological Inquiries.” “All animals possess *consciousness*—that is have *sensations*”—says Lewes: and in this sense so must plants possess Consciousness. Dr. Carpenter, in common with Lewes and other authors, holds that “*sensations* are, indeed, but states or forms of *consciousness*—just as much so as are ideas and emotions.” Professor Laycock speaks of “ancestral endowments manifested in all organisms, whether they be plants or animals, and whether manifested as energies or functions, or *states of consciousness*.”‡

*Purposive action*—movements, having a definite and intelligible *object*, aim, or end in view—involving, apparently, *intention* or *design*—and possibly even *motive* and *will*—are most familiar in the phenomena of prey-capture by such plants as the *Dionæa muscipula*. In its case there is *trapping* of the most efficient kind; inasmuch so, that its common English name is Venus' Fly-trap. Dr. Hooker goes the length

\* Brown, “Manual,” p. 567.

† Article “Sensation,” in “Chambers's Encyclopedia,” 1st ed., 1866.

‡ “Organic Laws,” p. 157.

of saying of *Darlingtonia*: "It is conceivable that this marvellous plant *lures* insects to its flowers for one *object*, and feeds them while it uses them to fertilize itself; and that, this accomplished, some of its benefactors are thereafter lured to its pitchers for the sake of feeding itself."\* His description does not necessarily imply a belief that there is *conscious* luring or object—his expressions being, presumably, *figurative*.† Dr. Carpenter obviously regards *prehension of prey or food* by *Dionæa* or *Drosera*, as a merely *mechanical*, automatic, or reflex, non-conscious act. "Just as mechanically," says he, "as the fly-trap of the *Dionæa* closes upon the unlucky insect that alights upon it, so do a frog's legs act, although the spinal cord has been divided both above and below the segment from which the nerves of the fore-legs are given off."‡ He is here drawing a parallel between the fore-legs of a male frog at the season of sexual excitement—which "tend to close firmly upon anything that is placed between them . . . and will retain that clasp for weeks"—and *Dionæa* in its seizure of insects or other bodies. But the parallelism is an unfortunate one. In both cases he omits all reference to the *choice* of the object upon which to contract; in the one case the female frog, in the other nutrient, albuminoid, nitrogenous substances. In the one case, as in the other, the legs or leaf margins may contract, under exceptional circumstances, upon "anything that is placed between them." But, so far as concerns at least the *Dionæa*, this does not always happen; and, when it does, it is to be attributed to an *error* which the plant not only *discovers*, but *rectifies*. There can be no doubt that, as a rule, it *distinguishes between suitable and unsuitable food*, or rather between bodies which may supply food on the one hand, or are incapable of doing so on the other. This eclecticism, *selection or choice*, can scarcely be set down, even by Dr. Carpenter, as "mechanical." He, himself, however, feels bound to admit, with regard to the frog, that "a few physiologists" still "credit the spinal cord of the frog with the power of *conscious self-direction*."§ He draws attention to the fact that the *headless*

\* Address on "The Carnivorous Habits of Plants," delivered at the British Association Meeting at Belfast, 1874, and reported in "Nature," September 3, 1874, p. 370.

† Just as such terms as *sleep*, *love* and *soul*, are used figuratively by at least the majority of those who employ them at all in regard to Plants.

‡ "On the Doctrine of Human Automatism."—Contemporary Review, Feb., 1875, p. 410.

§ *Ibid*, p. 412.

frog makes purposive effort without any "necessary excitement of *consciousness*"—as is proven, he thinks, by other similar cases that occur in man and other animals, in whom, by accident, disease, or experiment, communication is cut off with the brain.\* But a flaw in his argument is this—that it has yet to be proven that Consciousness is dependent upon *brain*, or is necessarily associated therewith. I hold, on the contrary, that unless we re-define the term *consciousness*, we must regard some form or degree of it as occurring in *both animals and plants that are destitute, not only of brain, but of a nervous system.*

The decapitated frog rubs off an irritating drop of acetic acid from one of its thighs; but we are not shut up to the conclusion that no kind or amount of Will or Consciousness exists simply because the *brain* has been removed. On the contrary, it is an equally legitimate inference that *will and consciousness may exist quite independently of brain.*

Dr. Carpenter also points out that a *headless* Centipede *surmounts obstacles* it cannot see; while the headless *Mantis religiosa* clasps its claws round any object introduced between them.† And he cites both as instances of original or primary *automatism*; secondary or acquired automatism being that which is begotten in man, and, probably, in certain other animals, by Habit.‡ If, in an Ascidian, "the ciliary current should draw inwards a particle of unsuitable size or character, the contact of this with the guardian tentacles excites a *reflex* contraction of the muscular sac, whereby a jet of water is squirted out that carries the offending particle to a distance. It is obvious that this act no more represents *conscious intention* . . . than the cough of the infant represents a desire to get rid of an uneasy sensation in its throat. In the one case, as in the other, the *adaptiveness* of the action to the *purpose* it answers, is simply that of a piece of *mechanism*, and we characterise it, therefore, as *automatic.*"§ Darwin speaks of certain movements of the tentacles of *Drosera rotundifolia* as "partaking of the nature of those actions which, in the nervous systems of animals, are called *reflex*;"|| and yet he describes it as possessing *volition and selection*, in choosing only such materials for digestion as conduce to its wants.

*Reflex* action is not necessarily, however, the simple

\* "On the Doctrine of Human Automatism."—Contemporary Review, Feb., 1875, p. 402.

† Ibid, p. 406.

‡ Ibid, p. 407.

§ Ibid, p. 400.

|| Review in "Nature" (July 15th, 1875, p. 209), by Dr. A. W. Bennett, of Darwin's "Insectivorous Plants."

mechanical matter it is now too generally supposed to be. Professor Laycock observes—"It may be said generally that there is just the same Law of Relation between the tissues of the Sensitive Plant and the impression or the touches which make its leaflets contract, as there is between impressions on the Senses and the Brain tissue. In short, there is a Law of Trophic Reflex Action running throughout all those phenomena up to the *highest mental manifestations*."\* On this subject, also, Dr. Brown remarks—"Even in some higher animals, where no nervous system has yet been detected, very complex vital movements are performed, apparently quite as much due to *animal irritability*, as those described in the preceding paragraphs are to *vegetable irritability*."†

The curious phenomena of *choice* or *selection* are best seen and known in connexion with *food-search* or supply. The *Dionæa* leaf either does not embrace indigestible substances, such as stones; or, having clasped them for the moment, it speedily relaxes hold; it does not pour forth its solvent juice, which is said to contain substances that either are, or are analogous to, formic or propionic acid, and pepsine.‡ In *Drosera*, though contraction occurs in response to mechanical irritation by an indigestible substance, this contraction does not continue; whereas, in the case of digestible bodies, contraction continues till digestion has been completely effected—that is, till all nutriment has been extracted. Moreover, in regard to food-selection, it would appear that plants commit, discover, and correct Errors—as animals do—*e.g.*, the *Drosera*, which—in the hands of Mrs. Treat, an American lady-experimentalist, whose experiments are quoted by Darwin, Hooker, Balfour, and all recent writers on the subject of carnivorous plants—was so far deceived by a piece of moistened chalk, "that it curved its stalk-glands inwards towards it, but, immediately thereafter, on discovering its Mistake, withdrew them."§

*Preference* in plants is, however, by no means confined to food-selection. Darwin evidently implies Selection in what he says of "the more perfect tendril-bearers" among climbing plants, bending towards or from the light, or disregarding it, "whichever may be *most advantageous*."|| In the

\* "Organic Laws," p. 161.

† "Manual," p. 585.

‡ According to the recent researches of Professor Dewar, of Cambridge, and Dr. Lawson Tait, of Birmingham.

§ Dr. Thos. A. G. Balfour in the "Garden."

|| "On the Movements and Habits of Climbing Plants," Journal of Linnean Society : Botany, Vol. ix, 1867, p. 118.

latter expression he would appear to attribute to the plant even a kind or degree of judgment or *judiciousness*. There are, however, many other interesting phenomena exhibited by *climbing plants*, some of which lead to the conclusion that they—like their carnivorous colleagues—may, or must, possess some sort or amount of *good sense*. Thus, some twiners—central American forest Lianas—show a marked *antipathy* to certain trees, refusing to coil or climb round them; the singular coincidence being that the trees thus slighted are physically unsuitable for their support.\* The tendrils of various climbers frequently attached themselves for a time to objects presented to them experimentally by Darwin; but withdrew on finding these supports unsuitable. Here, again, we have *experiment* or tentative action: *error*, and its rectification. The tendrils of *Bignonia capreolata*, he says, “soon recoiled with what I can only call *disgust* from [a glass tube and a zinc plate], and straightened themselves.”† In the tendril-bearing *Bignonia speciosa*, “the whole terminal part (of the tendril) exhibits one odd habit, which, in an animal, would be called an *instinct*, for it continually *searches* for any little dark hole into which to insert itself. . . . The same tendril would frequently withdraw from one hole and insert its point into a second one.”‡ Here we appear to have *investigation*, *search*, *survey*, *examination*, *observation* and *discovery*, without vision; but by what faculty or means we know not. Spirally-twining plants—such as *Hoya carnosa*—move in *search* of supports round which to twine.§

In the search after both food and supports, carnivorous and climbing plants develop a conspicuous *effort* of a perfectly spontaneous kind; and they do so repeatedly, till they succeed in obtaining what must be considered their *object* or *purpose*. Thus, there is spontaneous effort in the movement of the leaves of *Drosera* towards flies not touching them, but placed in their immediate vicinity.|| According to the observations and experiments of Mrs. Treat,¶ on an American Sundew—*Drosera filiformis*—“when living flies are pinned at a distance of half-an-inch from the apex of the leaf, the leaf actually bends towards the insect until the plant reaches it and sucks its juices.”\*\* Here we must have some estimation, measurement, or *calculation* of *distance* or *space*, unless we

\* Brown, “Manual,” p. 580.

† “Climbing Plants,” p. 57.

‡ “Climbing Plants,” p. 55. § Brown, p. 580. || Balfour in “The Garden.”

¶ These experiments are noticed paragraphically in “Nature,” February 26th, 1874, p. 332, and July 15th, 1875, p. 207.

\*\* Brown, p. 577.

are to suppose the existence of some irresistible physical attraction proportionate to the contiguity; for the plant makes its singular effort only when the fly is within physical range. Darwin describes the “continued *striving* of the tip” of a tendril of *Echinocystis lobata* “to curl itself closely inwards” round a stick with a flattened side.\*

*Attachment* to place or things, which are obvious in the case of many climbers, may, perhaps, in other plants explain much that the botanist, horticulturist, arboriculturist, floriculturist, or agriculturist cannot otherwise satisfactorily account for, viz., how it comes that the same species will grow in certain localities, and not in others—the circumstances of temperature, soil, exposure, and so forth, being apparently the same. In connexion with which subject, it is desirable to bear in mind, further, that plants exhibit occasional *individuality*, and even *eccentricity*, for which we cannot account, any more than we can for similar personal peculiarities in man or other animals. Thus, only certain individuals of a species are sometimes affected by atmospheric influences—or by artificial light or heat. The side leaflets of *Hedysarum gyrans* are so eccentric as to make it appear “as though the whole plant were actuated by a feeling of *caprice*.”†

Poets talk of the *sense of life*, or of its active or positive Enjoyment, in plants; they describe them as being endowed with the capacity of being affected by *pleasures* and *pains*. All this may be purely fanciful and poetic; but it is possible there may be more of truth in these fancies of the poet than is generally supposed. They may prove to be previsions of what, some day, may admit of something like demonstration. Wordsworth says, for instance—

“ ’Tis my faith that every flower  
Enjoys the air it breathes.

The budding twigs spread out their fan  
To catch the breezy air;  
And I must think, do all I can,  
That there is *pleasure* there.”

Professor Laycock describes what he calls “*organic memory*” as a vital process common to plants and animals. But he also speaks of it, unguardedly, as “*cerebral*.” “*Organic memory*,” says he, “consists in *cerebral* processes regulated by the Laws of Evolution and Reversion, and common as vital

\* Climbing Plants,” p. 77.

† Professor Lawson—“Vegetable Physiology,” p. 78.

processes to both plants and animals.”\* The sentence certainly requires reconstruction, in so far as, though it may be quite legitimate to speak of “organic memory” in plants, it cannot be correct, unless in a fanciful sense, to refer it to a “cerebral” process, or action. He is supported, however, in his fancy by Dr. Erasmus Darwin—the well-known author of the “Zoonomia”—who asserts “that Plants are only an inferior kind of Animal, and that . . . some of them have *brain* and a *stomach*, and are endowed with the *lower senses*.” According to this fanciful doctrine, the *medulla*, or pith, was made the seat of *sensation*, and was considered analogous to the spinal marrow of animals. . . . The doctor . . . had no followers, as his Hypothesis presented too many difficulties to be even partially believed.”† His doctrine is not, however, so “fanciful” as Professor Lawson here evidently believes. However eccentric may have been many of his views, Dr. Darwin was a philosophical Naturalist, with opinions far in advance of his age; and there can be no doubt that there is good ground, to a certain extent, for the parallel he draws between Plants and Animals.

Not a few authors ascribe *soul* to plants—another instance of an attribution that must, in the meantime, be considered *fanciful and poetic*—a mere matter, as in Wordsworth’s case, of personal Faith. But it must be remembered, in this connection, that we know nothing of the human Soul except as a similar matter of Faith. There is no such thing as a satisfactory Definition of the Human Soul, scientific or otherwise; and it is impossible to demonstrate, by any kind of scientific or ordinary evidence, that such a thing as Soul exists in whole Races of Man. In early savage philosophy, Plants were endowed with Souls. “The doctrine of transmigration allows plants to enter into the line of successive tenancy of a spirit. Moreover, the existence of tree worship carries with it, by inference, the belief in *tree souls*.”‡ Aristotle applied the term *soul* (= psyche) “to all the characteristic functions of living bodies, from nutrition up to the loftiest attributes of intellect.” He recognised—(1), a nutritive soul common to *plant* and animal; (2), a sentient and percipient soul peculiar to the

\* “A chapter on some Organic Laws of Personal and Ancestral Memory,” “Journal of Mental Science,” July, 1875, p. 155.

† Section on “Vegetable Physiology,” in Chambers’s “Information for the People,” 1857 [by Professor Lawson, of Dalhousie College, Halifax, Nova Scotia].

‡ Sir John Lubbock on the “Origin of Civilisation,” chap. v.

*animal*; and (3), a noëtic soul—the “ nous” or intelligence—the special prerogative of *man*. That is to say, he distinguished three kinds of souls—(1), plant soul; (2), animal soul; (3), human soul: the first being devoid of *consciousness*.\* In such a classification a rigid, artificial, and erroneous line of demarcation is drawn between *sensation* and *intelligence*. “Mr. Tylor would say that the *plant soul* of Aristotle was the survival of the plant-soul of the lower races (of man), rather than his own independent reflections on the community of plants and animals as living things.”† Like Aristotle, Thomas Aquinas held that there is—(1). A *vegetable*, or nutritive-unconscious soul; (2), an *animal*, conscious soul; and (3) the intellect‡ of *man*. “According to the ancient doctrine (of Palingenesis), if the ashes of a plant . . . be treated according to certain rules, there will be seen in the smoke its *soul*, produced as the colour and form of the plant.”§ . . . . “Again, if the ashes of the plant be frozen, the Soul-form of the plant will be exactly represented in the ice. This was termed a re-birth, or re-generation, of the plant” . . . . *Palin* against, *Genesis* birth.|| Figuier, in his “Day after Death,” holds, “as to the origin of a Soul, that Animal-germs are contained in Plants . . . . which pass at the death of the latter into the body of the organisms next in the scale of development.”¶

No doubt I will be told that an essential difference between animals and plants consists in the presence, in the former, and absence in the latter, of *consciousness*. Even Professor Bain contrasts “life without consciousness” (as in plants), and “life with consciousness” (in animals and man).\*\* But, on the one hand, it seems to me impossible to resist the conclusion that some form or degree of Consciousness exists in Plants—unless, to be sure, mental philosophers shall succeed in so re-defining that term—in so restricting its meaning—that it is made applicable exclusively either to man in particular, or to animals in general. And, on the other hand, there is much mental action—there are many phenomena, at all events, that are generally considered mental in their nature—that are exhibited by Animals, including man himself, without the concomitance of Consciousness.

\* Sir John Lubbock on the “Origin of Civilisation,” p. 181.  
† “Mind and Body: the Theories of their Relation,” by Prof. Bain: one of the International Scientific Series, 2nd ed., London, 1873, p. 155.  
‡ Lubbock, p. 181. § Laycock, “Organic Laws,” p. 183.  
|| Laycock, “Organic Laws,” p. 184. ¶ Quoted by Laycock, *ibid*, p. 185.  
\*\* “Mind and Body,” p. 155.

As to *plants*, it is difficult, to say the least, to dissociate the idea of Consciousness from that, for instance, of free *choice* and *will*. No doubt it will be objected that in plants Choice is "instinctive," and consequently unerring. We have been told the same thing for ages as regards Animals; whereas the fact is (*e.g.*), as regards that operation common to both plants and animals—food-selection—Animal Instinct is so very fallible that, even in the higher animals, the young require the special instruction of their parents what to eat, drink, and avoid, while the seniors themselves are constantly making fatal mistakes as to quantity and quality. We have already seen that Plants commit *errors* of a similar kind; and we must bear in mind that the Commission of Error is totally irreconcilable with current opinion, especially among ignorant theologians, as to the "unerring" character of what is called "instinct." In food-selection, in certain plants, there must be a certain Consciousness or perception of what is, or is likely to be, noxious or salutary. On what other supposition can we account for the refusal or avoidance of the one, and the selection or acceptance of the other? There may even be a certain *knowledge of consequences*—for instance, of the ingestion or digestion of special kinds of food. In carnivorous and climbing plants there is a *choice*, or alternative, between action and inaction—acceptance or refusal; and the choice made is not always judicious. There may be an Error, and the error may be *corrected*; but, in order to such correction, there must surely be some kind of *consciousness* or perception that a mistake has been committed; an exercise of *will* in making further efforts at success; and a knowledge of means to an *end*, with their proper adaptation or application.

In regard to *animals*, including man, there can be no doubt that—

1. *Consciousness* may not exist where it appears to do so.
2. Just as it does really exist when it is seemingly absent.
3. Throughout the animal kingdom there is much mind without demonstrable Consciousness or with demonstrable unconsciousness; while
4. Even in man himself of the highest culture, there is a whole series of phenomena belonging to the category of "*unconscious cerebration*" or reflex action. In him the Conscious is constantly passing into the automatic.

The late Dr. Forbes Winslow thus sketched the genesis and nature of *consciousness* in animals and man:—"All that

we can say of Consciousness itself, in its simplest form, is this—that when certain impressions reach the vesicular neurine, which is the seat of Consciousness, the mental principle experiences a change in its condition, viz., a feeling of *pleasure* or of *pain*. If it be pleasure, then the order of events in the organism, which result from the reception of the impressions, are in accordance with the order pre-arranged for the good of the organism; if it be pain, then the order of events excited are inimical to the organism. Concurrently with this feeling—coincidentally, but not casually—there is a simultaneous action of the machinery pre-arranged for the given end of either attaining what is good, or avoiding or propelling what is inimical.”\* Exactly parallel phenomena occur in such Plants as *Dionæa*, which nevertheless possess no “vesicular neurine,” though they are not necessarily devoid of Consciousness. We are told further—“that a Nervous system is not necessary for such an arrangement in living organisms is proved amply by the phenomena of vegetative and cell life; but in the higher animals it is absolutely necessary, apparently from the complexity of the machinery to be co-ordinated and combined. . . . It is not difficult to advance a stage further, and conceive another *degree of consciousness*. In this there is, in addition to the capability of feeling pleasure and pain, the perception that it is something external to the organism which induces the feeling—the notions of *outness* and *causation* in their simplest forms, and the foundation of the instinctive belief in the existence of an external world. This state implies the existence of machinery for conveying impressions of external agents to the seat of Consciousness, or, in other words, *external senses*. Still, there is *neither reason nor will*; the external agents may be desired or abhorred, according as they are excitants of pleasure or of pain. But the predetermined arrangements in the ganglionic neurine are the source of all the apparently rational and voluntary movements.”†

“Is it at all certain,” asks the late Sir Benjamin Brodie, “that a Polypus is endowed with any higher properties than those which belong to *vegetable* life? Do the motions of its filaments afford any better evidence of *sensibility and volition* than those exhibited by many *plants*, such as the *Mimosa*

\* Review of Sir Benjamin Brodie’s “Psychological Inquiries,” “Journal of Psychological Medicine,” October, 1854, p. 495.

† Ibid., p. 495.

*sensitiva*, the *Dionæa muscipula*, or the *Hedysarum gyrans*? Or, than the folding up of many Flowers in the night and in rainy weather? Or, than the motions of the minute bodies described under the name of Cilia in animals? Or, if the sensibility of the Polypus be taken for granted, may it not be a compound animal, with distinct centres of sensation and volition, in like manner as, in a tree, every bud is, in fact, a distinct individual?"\* . . . On which queries the late Dr. Forbes Winslow thus comments:—"There has been too much assumed in investigating the class of phenomena here referred to as to the existence or absence of *feeling* or *consciousness*. The question is one of *inference*, and not of *observation*; and all experience shows that errors may easily be made either way. Thus, the adaptive and conservative nature of the *spinal reflex* movements are so strikingly indicative of a *rational will*, that even yet the hypothesis that *sensation* is an endowment of the spinal cord, or even of sections of it, is maintained. On the other hand, the entire absence of such movements has led observers to the erroneous conclusion that Consciousness is abolished—nay, that vital action has ceased for ever."†

Mr. Douglas Spalding, in a paper on "Instinct and Acquisition," read before the last meeting of the British Association (at Bristol, 1875), "claimed that the actions of the higher animals and man were quite parallel with those of insects; and that *consciousness* only ran alongside, without having the slightest influence." ‡

Dr. Brown is of opinion that there is no *conscious* effort in the protective *mimicry* either of Lepidoptera or Plants;§ and it may be that the prehension of prey as food is unattended with *consciousness* either in predatory Animals of the lowest class, or in such insectivorous Plants as *Dionæa* and *Drosera*. It cannot be said that such purposive actions are *necessarily* attended by Consciousness; but neither is it capable of direct proof that all kinds or degrees of Consciousness are absent.

Fortunately, I am not quite singular in the views I have above expressed, as regards what amounts essentially to the *psychical community of plants and animals*. Prof. Asa Gray, of Harvard College, Cambridge, Massachusetts, one of the most experienced and philosophical Botanists of the day,

\* Quotation in "Journal of Psychological Medicine," Oct., 1854, p. 493.

† Ibid., p. 493.

‡ Report in the "Athenæum," Sept. 11, 1875, p. 346.

§ "Manual," p. 558.

thus writes on the subject:—"When we consider that the *excitability* of sensitive plants is often *transmitted*, as if by a sort of *sympathy*, from one part to another; that it is soon *exhausted* by repeated excitation . . . . . to be renewed only after a period of *repose*; that all plants require a season of repose; that they consume their products and evolve *heat* under special circumstances, and with the same results as in the animal kingdom; that, as if by a kind of *instinct*, the various organs of the vegetable assume the position or the directions most favourable to the proper exercise of their functions, and the supply of their wants, to this end *surmounting* intervening *obstacles*. When we consider, in this connection, the still more striking cases of *spontaneous motion* that the lower Algæ exhibit, and that all these motions are arrested by *narcotics* or other *poisons*—the narcotic and acrid poisons even producing effects upon vegetables respectively analogous to their different effects upon the animal economy—we cannot avoid attributing to *plants* a vitality, and a power of making movements tending to a determinate *end*, not differing in nature, perhaps, from those of the lower Animals. Probably life is essentially the same in the two kingdoms; and to Vegetable life faculties are superadded in the lower Animals, some of which are here and there indistinctly foreshadowed in *plants*."\* Dr. A. W. Bennett, one of the translators of Sachs' "*Lehrbuch der Botanik*," and one of the editors of "*Nature*," says:—"Biologists generally are probably hardly prepared to apply the terms *intelligence* and *will* to the Vegetable kingdom. But the use of the term vegetable life seems to me to imply, of necessity, that there are powers at work in the economy of the plant, as well as of the animal, which it is in vain to attempt to reduce to manifestation of the forces which govern the inorganic world."† Such are the views of *botanists* of the advanced school. Here is the opinion of a veteran *psychologist*, the late Dr. Forbes Winslow:—"If a psychologist, thoroughly imbued with the truth of this proposition—that the nature of the human mind, and its relation to organisation, may be investigated through the mental phenomena of the inferior animals—sees in all the acts of these, his lower fellow-creatures, the reflected image of the working of his own mind—he cannot watch the instinctive or other acts of the smallest or lowest without feeling those touches of nature

\* "How plants behave," 1872, p. 350, quoted by Brown, "*Manual*," p. 585.

† Quoted by Brown, "*Manual*," p. 558.

which make the whole world kin, or without obtaining wonderful glimpses into his own mental being, and thus, day by day, acquiring fresh knowledge. Nor will his observations and sympathies be limited to Animals; for as the mind evolves the ideas, which naturally flow from so suggestive a principle, it passes from one gradation of life to another, ever descending by imperceptible steps until at last the ever-varied phenomena of *vegetable* life are brought into the same category, and the identity with his own of Mind in Creation, as well as in animal life, is made manifest. . . . . The fact is, that no man is properly qualified to observe, compare, even estimate these mental phenomena in the organised beings below him, until he has . . . . . descended from that lofty pedestal upon which his Pride of Place has exalted him. That pride hinders the operation of his powers, whether of observation or of reflection, by restricting them to the narrow sphere of his own life. His prejudices blind him, or pervert his judgment; they harden his heart by contracting his sympathies; and so the hidden chords of his nature, which are in unison with those of the creatures below, rarely vibrate to the awakening of new ideas, or vibrate but imperfectly.”\* And again, he remarks:—“Vegetable life is so universally *assumed* to be, as a matter of course, *unconscious*, that it appears a mere folly to express a doubt of the assumption. But let a close observer and admirer of Flowers watch carefully their proceedings on the opposite assumption—namely, that they not only feel, but *enjoy life*, and he will be struck with the immense array of facts which may be adduced in support of it. Endow them hypothetically with *consciousness*, and they appear to the observer in an aspect altogether different. Their Instincts seem, indeed, *mutatis mutandis*, to be easily compared with those of the higher Animals. Unquestionably they are in the same category in this respect with the lower forms of animal life, respecting which it is impossible to determine whether they have Consciousness or not.”†

Many other writers—botanical and psychological—speak of the *instinct* or *instincts* of plants; sometimes correlating them with the instincts of animals; in other cases regarding them as something *sui generis*—simply because of their occurrence in Plants, and of that curious bias or prejudice which leads even the most highly educated men to differentiate,

\* Review of “Psychological Inquiries,” p. 481.

† Ibid, p. 494.

so far as they possibly can—evidence to the contrary, notwithstanding—Plants from Animals. A work entitled “Indications of Instinct,” by the late Dr. Lindley Kemp,\* contains a chapter on the “Instincts of Plants,” as well as of all classes of animals. Remarks on the “Instinct of Plants,” are also contained in the “Sacred Philosophy of the Seasons,” by the late Rev. Dr. Duncan, of Ruthwell.† Professor Laycock describes in Plants, as in animals, “new Instincts and special hereditary adaptations to new conditions;”‡ and he speaks of “the atavistic transmission of Instinct, and of other capabilities, whether in Plants or animals.”§

De la Mettrie, who has been introduced to English readers by Carlyle, as one of the boon companions of Frederick the Great in the early part of his reign, wrote a book having the title “Man a Plant.”||

There can be no doubt that, at present, the *Terminology* of mental philosophy is most defective, and perplexing; and that it gives rise to much of the difficulty connected with comparisons—as to mental aptitudes, real or supposed—between Man, the Lower Animals, and Plants. The same terms are frequently applied to these three groups of living beings in very different senses. Thus, the *irritability* of the *Dionæa* or *Drosera* is something very different from that of the caged baboon or ape. In the one case, the designation is applied to an action supposed to be purely reflex or excitomotor—unassociated with Consciousness; while, in the other, expression and action are said to result from a morbid Consciousness, and to be directed by disordered Reason or Feeling. *Contractility* under the influence of a stimulus, and *irascibility*, or irritability of temper, are very different things. Such terms as *sensibility* and *sensitiveness* are also very vaguely and very variously employed by physiologists, metaphysicians, and the general public; sometimes as denoting mere physical—muscular or nervous—excitability, sometimes in reference to keenness of moral feeling. In order to apply appropriately such terms as Mind, Consciousness, Intention, Design, Desire, to *plants*, it is obvious we must change, or, at least enlarge, our conceptions of their character, and our Definitions. The only alternative is a complete revolution in the terminology of

\* A vol. of the “Traveller’s Library,” 8vo., London, 1854.

† Vol. on “Winter,” 4th ed., 8vo., Edin., 1841.

‡ “Organic Laws,” p. 157.

§ Ibid, p. 156.

|| Mentioned by Bain, “Mind and Body,” p. 186.

mental and pseudo-mental phenomena in man, the lower animals, and plants. For myself, I am not prepared to inaugurate any such revolution, being content to adopt the terms currently in use in their vague and comprehensive significations; applying them to all classes of organised beings; in other words, to regard *mind*, and all its essential or concomitant phenomena, as common in various senses or degrees to *plants, the lower animals, and man*.

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*Skæ's Classification of Mental Diseases.* By T. S. CLOUSTON, M.D., F.R.C.P.E., F.R.S.E., Physician-Superintendent Royal Edinburgh Asylum.

When I saw in the last number of this journal that Dr. Crichton Browne had essayed the task of criticising the system of classification of insanity devised by the late Dr. Skæ, I knew the fact could not but be gratifying to Skæ's friends. To have any system or theory subjected to independent criticism is very good for it. Then I could not forget that some of those who had advocated most earnestly Skæ's classification had been pupils, assistants, and friends of his during life; and I was conscious, from my own experience, how much anyone in that position was inclined to look partially on his work. I felt sure that Dr. Browne, while seeing this, would not, in those circumstances, consider it a mortal sin, and would pass it gently and generously by. Indeed, I was a little afraid that he himself, as an old pupil of Skæ, might be tempted to soften the stern tone befitting a critic, by something of the same pardonable feeling. He has striven to resist this impulse, and with much success. Another reason why I rejoiced that the merits of this system should be canvassed was, that I thought with, perhaps, natural partiality, that everyone must necessarily see something good in it; and that the fact of its being looked closely into by a competent and unbiased mind would produce a better understanding of Skæ's point of view, and a more thorough sifting of the tares from the wheat. Not that such criticism had been wanting either at home or abroad. The system had been before the world for twelve years. The authors of all the standard books on psychological medicine and papers on classification published since that time had discussed its merits; and it did seem as if it were growing in favour. Maudsley, in

each successive edition, had seemed to make more and more account of it; Blandford had assigned it a good place amongst other systems; Hack Tuke had given high praise to all the "somato-etiological" systems of looking at and classifying mental disease, and to Skæ's in particular; Mitchell had declared it had taken hold of the medical mind; Thompson Dickson had said there was some good in it; and finally, that Nestor of alienists, whom Dr. Browne fitly describes as "the most illustrious representative of English medical psychology now living," Bucknill, had given it the truest flattery of all by incorporating its nomenclature in the orders, genera, and species of that classification which is the final result of his vast experience, the generalised sum of all his thinking. All these, and more, had found it had faults; but they all speak of it and its author with much respect. Then it is a mere matter of fact that its terminology had become a part—and an essential part—of recent writings on nervous and mental disease.

When, in addition to all this array of criticism, I observed that Dr. Browne had entered the field, I was surely justified in the expectation that here was a critic who would combine the modesty of youth with the judgment of experience, the calmness and dignity of science with the sense of responsibility of a physician.

I regret that I am obliged to take exception both to the matter and the manner of Dr. Browne's critique. I shall first endeavour to deal with its matter. To do this properly is no easy task. I do not mean that the arguments appear to me unanswerable, or the objections overwhelming; but that Dr. Browne, no doubt from his desire to be exhaustive, seems to have failed in arranging his ideas in that order, and in expressing himself with that clearness and point so very essential in a critique of any value.

Dr. Browne begins by a defence of Esquirol's system. His argument is that "day by day it becomes more apparent that we shall never accurately make out the molecular changes which correspond with mental aberrations," being "still as far as ever from mounting a delusion in Canada balsam or from detecting despondency in a test tube." "It is clear, therefore, that these changes can furnish no direct assistance in the classification of the *insaniæ*." A pathological classification is, therefore, an impossibility. The dream of so many patient workers in clinical and pathological fields is a mere chimera. Now, is this position, so confidently stated, a correct inference from facts, or a mere

assertion? It lies on the threshold of the main question at issue in the critique; but its examination may help us to understand our critic's mode of reasoning in other places. Let us see what reversing all this would bring us to. "Day by day it becomes more apparent that we shall *soon* accurately make out the molecular changes which correspond with mental aberrations, being *on the eve of* mounting a delusion in Canada balsam. It is clear, therefore, that a knowledge of these changes will furnish a direct assistance in the classification of the *insanix*." Am I right in holding this position to be as good as the other, and as near truth? Neither of them are true inferences. They are both speculations taking the form of inductions from facts, but founded simply on the assertions and opinions of their authors. Now, this is a well-known mode of (so-called) reasoning used by the uneducated who can't see its unsoundness, or by the man who, knowing better, reasons with the ignorant. Supposing a critic of that time had said about Louis and Laenec's deductions, "day by day it becomes more apparent that we shall never accurately make out the pathological changes that occur in the lungs and heart which correspond with aberrations of the breathing, being still as far as ever from mounting a cough in a bottle of spirits, or from detecting palpitation in a spit-box. It is clear, therefore, that these changes can furnish no direct assistance in the classification of pulmonary and cardiac affections." What would now be thought of this bit of childish sophistry? Would it not simply be a standing record of the unwisdom of its author?

Founding on this inference, Dr. Browne goes on:—"We must be content to seize upon the signs and symbols of insanity, and by a thoughtful analysis and synthesis of these to distinguish, as well as may be, their cerebral starting points. There is no force, therefore, in Dr. Skae's objection to Esquirol's system that it is a classification of symptoms, and not diseases." Is not this arriving at one negative conclusion founded on a mere assertion, making use of it as if it were a positive fact, and then basing another conclusion upon it? Even supposing a pathological classification to be impossible, does that prove that nothing but a symptomatological one is possible? It is noteworthy that it was at that point it began to "dawn on 'the critic' that Dr. Skae's mind must have been in a state of confusion as to the real significance and relations of symptoms," because Skae had said symptoms were not diseases!

Skæ's illustration from fevers is next seized on. He evidently had selected this because, while definite groups of mental symptoms were present, yet all agree that they are not a sound basis of classification. Dr. Browne, apparently not seeing the real appropriateness of the illustration, makes a discovery. "Curiously enough, these fevers generally correspond with the kind of delirium which he has named." Of course they do. This was why Skæ selected them. "It thus appears that the very symptoms which are dismissed as forming no foundation for division, guide to the very same division as is sanctioned by Dr. Skæ." Just so; they "guide to it," but they have not, therefore, been taken by nosologists as the basis of the classification universally adopted. Skæ, no doubt, thought that the term Acute Relapsing Mania might possibly "guide to" his "Insanity of Pubescence," but would scarcely, on that account, be held by any physician to express as much in regard to the origin, progress, and prognosis of any given case. Muttering delirium may occur in erysipelas or septicæmia, as well as in typhoid—surely a good reason for avoiding it as a basis of naming any of these diseases. But Dr. Browne then says that Skæ's comparison is "disingenuous and indefensible," because he has taken a "*secondary* symptom" in fevers to compare with a "*primary* symptom" in insanity. He thinks that Skæ ought to have taken the pyrexia. That would have been taking one kind of symptom in one disease to compare with a different kind in another. But apart from that, were fevers classified by the pyrexia, primary symptom though it is? Or by any one or series of symptoms, primary or secondary? Were they not classified according to an accurate clinical study of their origin, symptoms, course, terminations, and pathological anatomy? In other words, according to their "natural history?"

In the next seven sentences he makes as many statements as to the opinions and proceedings of Skæ and his pupils, every one of which would be repudiated by them. When and where did they claim to be the first to insist on the truth that insanity is a disease of the brain? What Dr. Tuke said was, that Skæ's "*nosology* was the first to *keep ever before us* the all-important principle that insanity is a disease of the body." Nowhere did they protest against any attempt to apply to insanity the same method of classification that has been applied to diseases of all other organs? or say that Esquirol's

classification was unsound because it was "founded on clinical observations?" or say they gave the preference in classification to the fewest and most trivial attributes? or show that they "devote their attention wholly to these circumstances in insanity that have a minimum significance?" This is what some people would call a reckless mode of fastening the critic's own fancies on the shoulders of others, and a suitable ending to his preceding reasoning! The truth is, that Skae's words, in regard to Esquirol's classification are, "it is an excellent classification of *symptoms*, but not a classification at all of *diseases*, or *forms of insanity*." He agrees with Dr. Mitchell, that "we can never do without the old terms, *mania*, *monomania*, and *dementia*. They are useful for classifying patients; for a brief description of their state for practical purposes, such as indicating their mode of classification, the propriety of their isolation, and their mode of treatment; but to allow those terms to represent true *forms of mental disease*, is a scientific blunder." Now, I venture to say, that this expresses the whole truth in regard to the matter, in the opinion of nineteen out of twenty competent judges. Dr. Browne's defence of Esquirol was, therefore, unnecessary.

One test case settles this matter. Does Dr. Browne deny that general paralysis, with its alternations of mania, melancholia, and dementia, is a true cerebro-mental disease, a distinct clinical, symptomological, and pathological reality? If he admits this, how does he classify it among Esquirol's divisions? Of course he must admit that it cannot be done. The most distinct, the most real, the most undisputed, the truest cerebro-mental *disease*, therefore, cannot be provided for in the classification that he defends. Can anything more powerful be urged against our accepting it as final; or any stronger incentive be applied for us to invent a better?

But we come to the gist of the matter in hand when our critic says—"It might be that the old system is good . . . but that the new one is still better. Is this so? Is there anything especially excellent and commendable in Dr. Skae's classification?" At an early part of this critique he had answered this question, by saying that it was "philosophically unsound, scientifically inaccurate, and practically useless." At the twelfth page he begins to prove this. His arguments and objections in the fifteen pages that follow may be shortly stated thus:—

1. Skae's system has no principle of construction—no bottom.
2. It is of no service in practice.

3. It withdraws attention from clinical observation.
4. It is incomplete.
5. There is no gradation, serial arrangement, or harmony in it.
6. It has a refractory ward.
7. Causes are confused with consequences.
8. Causes are assigned which are no causes.

Taking the first objection, as to the want of principle of construction and bottom, Skae himself said its principle was in accordance with the "natural history" of the disorders under consideration. I had ventured to define it as exclusively *somatic*, being thus distinguished from a *psychical* classification. Now I am not much concerned to defend my own definition. Its truth, or otherwise, does not affect the value of the classification. It may even deserve the scorn which the critic bestows on it; but I think Dr. Browne has not quite taken up my meaning. To take Dr. Browne's favourite illustration from plants: would it have been altogether a "magnificent *reductio ad absurdum*," if anyone, in pressing the natural system of classification on the acceptance of botanists, had defined it as the exclusion of everything connected with the number of the stamens and pistils of plants? Or, to take Dr. Browne's illustration on this very point from disease, when he asks "What should we know of neuralgia or of a stomach-ache but for subjective experiences? and yet these complaints are real enough, and piteously beg for assuagement." Now, I would say that neither the one nor the other is a "real" disease at all, but merely a symptom, and that the physician who, instead of attending exclusively to the "subjective experiences" of his patients, looked at their teeth, saw if they are pregnant or nursing, examined them for scirrhus of the duodenum, or obstruction of the bowels, or any other such lesion—such a man, I think, would be the most likely to assuage their pains, and come to a right prognosis, even though he should thus take an etiological method of going to work. If he had the experience and the insight still further to classify his neuralgias and his stomach-aches into epileptic, rheumatic, or malarious, hysterical, syphilitic, or metastatic, telling us how we could distinguish the one from the other, then, indeed, few would deny that he was a benefactor to humanity.

But, as I remarked, I am not careful to defend my definition. It was not sanctioned by Skae, and is merely negative, while his own, which I much prefer, is positive. When he said he had grouped the varieties of insanity "in accordance with the

natural history of each," he expressly states that he used a phrase "more familiar to the physician's ear" than the "botanical term"—"natural orders, or families." His idea was not, therefore, the botanical, or even the biological one. It was the physician's. Now, either Dr. Crichton Browne has not yet attained to the physician's idea of grouping and classifying diseases, or he makes the assumption that Skae was a great botanist simply to point a sneer. Whenever he refers to it, he assumes that Skae's idea was the botanist's, viz., the analytical process of separating the characteristics of the plant into those of the class, and those of the class into those of the order, and those of the order into those of the genus, &c. Now, this method is not that on which a clinical physician works. His must be a synthetic process. He must first hear and mark each individual symptom of a disease: "a disease," I find myself saying, as if it were an entity, like a plant. It is, of course, no such thing, although Dr. Browne talks as if it were. A disease is merely, in nine cases out of ten, a creation built up by the physician out of individual symptoms related by the patient, out of the phenomena perceived by himself during life, and the appearances noticed after death. Causes of all kinds must come in, symptoms must be marshalled in order of occurrence, sequence, course, and duration; pathological appearances must be co-related with all these; and then the physician, with the generalizing faculty, constructs his fabric, and calls it "a disease." The "natural history" of this generalization is, of course, the sum of all the steps in the building up of the fabric. But all diseases have not yet attained the certainty and the completeness that belongs to such a typical generalization. Some of them are founded on generalizations of causes only, some on generalizations of symptoms, some on generalizations of both combined. It must be admitted by all, that a structure resting on one prop only is less surely built than one resting on two or three. Symptoms are doubtless very important, but to found generalizations in medicine on them, surely they must be taken into account from their origin to their disappearance. To take any one set of symptoms present at a particular time, and ticket them with a name, must necessarily be the crudest and most initial generalizing process in medical science. Esquirol's classification is of this character. If causes are taken into account, as well as symptoms, especially if the cause *which has the closest and most real relation to the disease* is selected out

from the predisposing, exciting, and proximate causes present, and co-related with the *most distinctive symptoms present*, if, above all, pathological appearances are taken into account, whenever they are known, and so far as they are ascertained, and names given to such wider generalizations, surely this is an advance on the first plan. Skae's classification was formed on this principle. To say that a patient has "fever," is better than no information at all; to say that he has "malarious fever," is surely a deduction of greatly more value.

Dr. Browne, like some others, has got confused as to the real significance of Skae's nomenclature. Skae's nomenclature is, undoubtedly, founded chiefly on etiology; but this was because the symptoms of insanity are so changing, that a symptomological nomenclature would have been most difficult, even if there had not been the reason that the ground had been already occupied by Esquirol. But the name of a disease does not profess to take in all about it. If there is a distinct, definite train of cerebro-mental symptoms, having a relation to the tubercular diathesis, or to pulmonary consumption, and to an anæmic state of the brain with an irregular vascular supply, does it matter much whether it is called "phthisical insanity," or "dementia of suspicion," or "tubercular brain anæmia?" Skae, preferring a nomenclature descriptive of somatic conditions, showed both his insight and his experience, by selecting names for his varieties of insanity that conveyed an idea of the cause nearest related to, and most influencing the psychical disturbance.

Thus, Dr. Browne, not understanding what the natural history of a disease really means, and being led away by the nomenclature, or "basis," into supposing that Skae's system was an etiological one throughout, comes to the conclusion that he had found the least trustworthy foundation of all. But does he venture to assert that the causes of diseases are untrustworthy bases of grouping them, if we can find out the real causes? What is the morbid anatomy of disease, but one branch of its causation? Because he himself has confused "ideas as to the causation of disease," he seems to think that no one else can have more insight. He asks, helplessly—"How in cases of insanity is the information necessary to guide to an etiological classification to be obtained?" "How do we know that any case of insanity is post-connubial?" Why, from a consideration of its natural history, of course. He says, "Why should we not designate the case as one of melancholia?"

Because that does not tell us the kind and course of either the mental depression or the motor or sensory neuroses; because, above all, that gives no indication that the way to cure the man is to tell him to be less uxorious, and to take oysters and champagne and nitro-muriatic acid.

What Dr. Browne says about the great difficulty of ascertaining the causes of the insanity from relatives is, for the most part, irrelevant; and if the physician has the knowledge or insight to seek for the cause or bodily condition having the most intimate relationship to the disease, and most affecting it, as I maintain Skæ's system helps him to do, then it actually lessens the difficulty Dr. Browne complains of.

Let us next examine our critic's second objection, viz., that Skæ's classification is of no service in practice. This, if proved, does, indeed, wound it mortally. He says, "if a physician imbued with this classification is unable, as I maintain he is, to place in their appropriate groups a number of cases of which full and correct histories have been given him, then it is, indeed, indisputable that this classification is a source of weakness and a snare." To show that this is so, he gives, what I presume he means to be, according to his own ideas on this point, "full and correct histories" of six cases. The whole six take up just three-quarters of a page. They are really the oases of fact in the desert of argument and assertion—the "half-pennyworth of bread to this intolerable deal of sack." He does not say that they were six consecutive cases; but we are rather led to infer that they were selected by him specially to show the inapplicability of Skæ's classification. Let us, therefore, see if it is so entirely useless, even under these not very promising circumstances.

The first case had acute mental excitement of a delirious type coming on during an attack of acute rheumatism, lasting for some months, and accompanied by choreic movements. It was clearly a typical case of Skæ's Rheumatic Insanity. Dr. Browne asks if it was that, or masturbational, or metastatic, or post-febrile, or choreic? Why, it surprises me that he cannot see that in that case there was one bodily condition which had the most direct relationship to the psychosis, which caused it, which influenced its phenomena so that they were of a special delirious type, which was the cause, also, of a special and most characteristic motor disturbance, viz., the chorea, which, if Dr. Browne had really studied Skæ's system, would have enabled him to prognose its favourable termination,

and which, above all, might have directed him to such treatment that his patient might have recovered in the time similar cases, published by Dr. Sander and myself, took to get well. That was the rheumatic diathesis, and the actual rheumatic condition present. I most confidently appeal to the unbiassed judgment of any medical man whether "rheumatic insanity" does not tell more about such a case than "acute mania?" I would desire no better instance of its practical value than this test-case, related in four lines, by an enemy of the system. Before that system was devised, the case might have been supposed to have some nearer relationship to the masturbation and the nervous temperament, two predisposing causes, no doubt; but it is almost inexcusable that at this time of day Dr. Browne should not have been able to fix on the rheumatism as the real mother of the psychosis.

Dr. Browne has been even more miserly of details in his second case than his first. He tells us nothing as to the nature of the mental symptoms of the patient at all, except that they were "recurrent attacks of excitement," while as to the motor symptoms present they are described simply as "convulsive seizures." Surely, Dr. Hughlings Jackson has not been to the West Riding Asylum lately, or we should have had some clinical facts about these convulsive seizures, where they arose, what muscles they affected, whether they were bilateral or unilateral, how long they lasted, whether they were followed by paralysis, or increased temperature, or cephalalgia, or double vision, or hallucinations of the senses, or the epileptic irritability. In the absence of some of these facts, the diagnosis of syphilitic insanity cannot be made, so that I should class the case as one of "Epileptic Insanity." The epilepsy might, no doubt, be traumatic; but as the greater includes the less, if an injury has caused typical epilepsy, and this is followed by insanity, then the latter is "Epileptic," if it has the characters described by Skae, and so well known to all alienists.

The third is, so far as the symptoms are given by Dr. Browne, one of amenorrhæal insanity, and would probably have recovered if the amenorrhæa, or its cause, had been removed.

The fourth, which in brevity exceeds all the rest—taking up less than two lines of print—was apparently one of climacteric insanity, the symptoms being aggravated by the preceding attack of gout. Nothing can show better how little Dr.

Browne understands Skae's system, or how little real pains he has bestowed on its study, than that he should possibly suppose a case to be "podagrous insanity" whose chief mental symptom was depression, and which had occurred in the "weak and exhausted state after an attack of gout."

The two last cases, whose histories and antecedents were "undiscovered," and who both seem to have declined to give any account of themselves—the man believing that there was a conspiracy to poison him, and the woman being "silent"—need not have been insane at all, from Dr. Browne's description; and he cannot, therefore, fairly ask how they could have been classified under Skae's, or any other, system. Pray how did he classify them under Esquirol's?

The result of properly applying Skae's system to these cases is that much light is thrown on four out of the six, and the causes and bodily conditions that had the nearest relationship to the insanity, and influenced its symptoms most, are brought out.

It is a pity that Dr. Browne had stuck to his preconceived idea that Skae's system is a purely etiological one so closely, in relating those cases, that, though he gives so-called causes in abundance, and gets confused as to their significance, yet he takes no pains whatever to give clinical facts, mental or bodily. He makes a series of strong, but unsupported, assertions in the paragraph coming after his last case. One of the strongest of these is, "in no group is there any general indication for management, prediction, or treatment," or any "kindred features." Now, will he be good enough to point out any more definite group of mental and bodily symptoms than we see in his first case of rheumatic insanity? Or can he point out any variety of insanity that can be confused with it? Or any neurosis in which there are more particular indications for management, prediction, and treatment? The defence of Skae's system would, indeed, be an easy task, and its vindication complete, were all his varieties of insanity as definite as this one.

This brings me to the point at which it is proper to notice our critic's assertion that Skae and his pupils "give no such list of distinctive symptoms as would enable anyone to recognise and place a case of mental disease, apart from a knowledge of its history." Now Skae himself, and, I think, all his pupils, admitted that some of his varieties overlap each other, that some of them are not yet quite complete in their outlines, and

that, in the case of some of them, the symptoms taken by themselves at any one time, without reference to their origin and sequence, or to their causation, would not enable a physician to determine which variety it belonged to. But the Skae's groups and varieties share this fault with many other forms of disease. Could a physician always diagnose a case of septicæmia from one of typhoid merely by seeing the symptoms at any given time? Or one of ague from one of relapsing fever from the same data? Or one of simple pneumonia from one of acute tuberculosis? And yet what maladies are more distinct than these? Mental symptoms, too, are so much less definite and distinctive than bodily, that it scarcely seems wonderful that they appear indefinite in description. When we know all about the physiology of the brain, and about that objectively studied psychology to which Dr. Browne alludes, then we shall be able to use a more exact terminology for our psychical abnormalities. And even if we suppose that some of Skae's minor varieties may not turn out to be real natural groups at all, surely that does not invalidate them all, or affect the principle of the system. But I appeal to the descriptions given by Skae, in the Morisonian lectures, of the symptoms present in the insanity of epilepsy, or of masturbation, or of pubescence, or hysterical insanity; to those of Dr. Batty Tuke of the symptoms in puerperal insanity and that of lactation; and I would even venture to adduce the symptoms mentioned by myself, as occurring in phthisical insanity, to show that these varieties of mental disease are not only true groups with a real natural history, but can be recognised by the mental symptoms only. Does Dr. Browne deny the facts of those cases, and the statistics there adduced? He makes many assertions on all subjects in his critique, but he never once denies that epileptics who become insane have really mental symptoms peculiar to themselves, and that cannot be distinguished by the terms mania, melancholia, or dementia. What does he purpose to call this psychosis? If in this case he must follow all writers on mental diseases and call it epileptic insanity, why should the same mode of naming real sequences and groups of associated mental symptoms not be adopted in other cases? And why, finally, not give Skae the credit for having been the first to see this, and to extend and illustrate it? Nay, I appeal to Dr. Browne himself before he made the discovery that this mode of describing varieties of insanity is of no service in practice. In the "British Medical Journal" for July, 1871, he published an excellent clinical lecture on a

subject that he describes as "one well-marked type of madness to which the name of hysterical mania has been correctly assigned." Who assigned it this name but Skae, in his paper in 1864? Is Saul, then, among the prophets? Then, in the same journal for May 9th, 1874, he publishes another clinical lecture on "Senile Dementia," which, though the term may have been previously used, is a variety formed on Skae's principles, and is looking at a case from his point of view. Is Browne the clinical teacher when he wishes to describe the facts of mental disease to his students in the way that he considers most useful to them in practice, and up to the present state of knowledge on the subject—is he compelled to go to Skae's stand-point, to adopt Skae's principles; and even for a name to go to Skae's system, which Browne, the critic, now so "strenuously attacks," disparages, and "assails?" Truly this is of itself a psychological study.

In another place he says that there are not a dozen asylums in England where the classification is used. I believe I am far more correct in saying that there are not a dozen asylums in which many of its terms are not in use, and in which the somatic mode of looking at cases to which it gave so great an impulse does not prevail. If Dr. Browne himself can't resist its influence, surely that influence must be both strong and good. Could Dr. Browne give any proof (I should not be satisfied with an assertion, however positively given) that Esquirol's system was in use in a dozen asylums a dozen years after its promulgation? Did it never occur to him that to attack a thing with so much inconsistency, but with so little real art or force, may simply bring it into greater notice and favour?

Dr. Browne's third objection is, that Skae's system withdraws attention from clinical observations. To do him justice, he merely says this. He does not attempt to prove it, so that I need not seriously try to disprove it; but I would ask Dr. Browne, did Skae, in the illustrations of his varieties, go to nature for cases, or not? How can a system, based on the natural history of a disease, withdraw attention from the observation of the facts of nature? Have Skae's pupils been doctrinaires more than others, and wanting in clinical observation? Dr. Browne's reasoning, no doubt, still depended on his assumption that Skae's system was a purely etiological one, and on that he founded another assumption—that it *ought*, therefore, to withdraw attention from clinical facts. I would rather

claim for it, as one of its greatest of merits, if not its pre-eminent merit, that it has directed more attention to the bodily and clinical symptoms of insanity than all other systems put together. If its place should be taken at some future time by another and more perfect system, this will still remain as its distinguishing merit. Its very essence is the observation of bodily symptoms, and the best proof of this is the rapid way in which its somatic nomenclature of mental diseases has spread into medical literature. Had Dr. Browne really caught its spirit in this respect, he would never have made the statement that "no sound principle can justify the distinction between puerperal insanity and the insanity of pregnancy." Why, let him look into Dr. Tuke's statistics, and see for himself the distinction as to occurrence, symptomatology, and prognosis, and into the works of the more recent obstetricians, who are very strong on the complete physiological and pathological distinctions between the two conditions. Sound practice, at all events, distinguishes between the two. If Skæ was anything he was a clinician; and to have it said that his system, which he founded on a life's experience of clinical facts, "withdraws attention from clinical facts," is enough to disturb him even now. It seems absolutely ludicrous, in its perversity, to say that the association of groups of mental symptoms with such conditions as rheumatism, gout, syphilis, or hysteria, withdraws attention from clinical facts as compared with calling them "acute mania."

The fourth objection, that there is no completeness in the system, applies, says our critic, by its inability to overtake all the cases we meet with. Now, I admit the proposition that the system is not yet complete, and so did Dr. Skæ; but no one who has tried fairly to understand and apply the system, ever found that fifty per cent. of his cases were unprovided for; and no one who did not wish to caricature it would have made the heavy joke about the "insanity of the chloride of sodium." Its author said, with the modesty of a man who had looked at nature and found she was many-sided (and one involuntarily contrasts this with his critic's state of mind), "I by no means flatter myself it is a complete system;" but it "may culminate in a better—a more definite, and, at least, a more practical method than the one in present use." On turning to the report of the Carlisle Asylum for 1872, where I epitomised the results of ten years' experience (Table xxiii.), I find that out of 912 admissions, I had put down 108 as unclassifiable under Skæ's

system. This is at the rate of about 12 per cent. Considering the number of chronic demented and waifs and strays that come into a county asylum in ten years, with no history whatever, and no decided symptoms, this, I think, is not a large number.

The next objection we come to is, that there is no gradation, social arrangement, or harmony in it. This may be called the æsthetic objection to the system. My reply is, that diseases, when classified according to any natural system, seldom do gratify the tastes of those who desire to find such characteristics of biological classifications. If Dr. Browne's mind is set on such systems, he will find in Cullen, Mason Good, or Arnold, enough to gratify him. But, to quote his own words, "Disease, unfortunately, will not deport itself, according to our cut and dry notions, in a precise manner." "Indeed, as regards the functions of the nervous system, it would be vain to essay as precise a classification of them as we make of plants, animals, or minerals." "A classification of some sort is needful, and we need not be withheld from making one because our lines of partition will be artificial, vague, and shifting." It appears, therefore, "that if the so-called forms of insanity . . . merge into each other, that fact is much in their favour, and proves that they are conformable to the order of nature." Surely, our critic had forgotten those words, written in defence of Esquirol's system, when he is so severe on Skæ's for not coming up to his ideal standard.

To show that Skæ's groups can "associate themselves into general classes of higher generality," I need only refer to Dr. Batty Tuke's excellent paper in this Journal for July, 1870, in which he shows how naturally they fall into the "classes" of—1. Insanity resulting from assisted or impaired development of the brain, 2. Idiopathic, 3. Sympathetic, 4. Anæmic, 5. Diathetic, and 7. Toxic insanity. In this way Dr. Tuke brought Dr. Skæ's work into direct relationship with that of Van der Kolk and Morel, showing that the ideas of each of those men were harmonious with that of the other—each constituting an advance, from an independent point of view, on that of his predecessors—Skæ clothing the skeletons, which the two others had framed, with flesh and blood. Dr. Tuke, in that paper, has refuted successfully, by anticipation, many of the objections which Dr. Browne now urges against Skæ's system.

The objection that the system includes in it the class of "idiopathic insanity" which Dr. Browne calls a refractory ward, had been made by Maudsley and others before. Skæ pro-

fessed to found his system on the natural history of disease; and if the only circumstances in the natural history of the origin of certain cases of insanity to be found were sleeplessness, hereditary predisposition, and mental or moral causes, then why object to his calling such cases those of idiopathic insanity? He wished, above all things, to stick to the facts of nature, without regard to any predetermined principle, etiological or otherwise. And some people would say that it is a positive advantage for any system, devised before our knowledge of the facts is complete, to have a temporary niche in a convenient position in which to place our irreconcilables.

Dr. Browne's last two objections may be considered together, viz., that causes are confused with consequences; and causes are assigned which are no causes. Now, both of those statements, like many of the others, depend for their truth and force on the theory that Skae's system was entirely an etiological one—which he himself repudiated, and which no one, who looks at his list of groups, can believe. He merely said that the "basis" of his system was "essentially, though not entirely, an etiological one"—meaning that, in naming his groups, he had gone to etiology. Dr. Browne thinks that as "climacteric insanity (it will be observed that he uses the name as being a real thing) is dependent upon changes extending over several years rife with pathological risks, and it may, therefore, spring out of any one of a multiplicity of causes." This may be Dr. Browne's idea of "climacteric insanity." It was not Skae's, who never for a moment imagined that anyone could so misunderstand his system as to think that, if a woman became epileptic and insane between 44 and 50, her malady was to be called climacteric, any more than it should be so called if she, during an attack of rheumatism at that age, were to become delirious, have hallucinations of the senses, and choreic movements. But when arguing here our critic's mind was clearly in a state of bewilderment, for he expressly says, "Any woman attacked by mental disease, between the ages of 44 and 50, may, or may not, suffer from *climacteric insanity*." This is just what Skae would have said. In the very next sentence, however, he goes on—"To associate, as one form, all the varieties of mental disease that mark the epoch," &c. Skae did not do so, as his critic had clearly realised in the preceding sentence, by using the term "climacteric insanity" to express his idea of a definite group of mental symptoms. Skae's idea of this group was after all that of Dr. Browne, and not that attributed to him by

Dr. Browne; and so, for once, they entirely agree. It is, of course, a mere matter of opinion, and a question as to which, I affirm, that Dr. Browne is no judge, from the animus he displays against the system, as to whether Skæ's descriptions are hazy or clear. As to "rigorous definitions" being applicable to disease, such was Cullen's idea. What modern nosologist attempts it?

The critic says that probably the lung disease, in the cases of phthisical insanity, which I described in this Journal in 1864, was owing to hygienic defects in the Royal Edinburgh Asylum. If he had read the paper, he would have found the exact facts as to the commencement of the lung disease mentioned, and all the cases which had been long in the Asylum excluded. But exactitude as to facts is not his forte. He fails here to understand, too, that phthisical insanity is far more connected with the diathesis, than with the mere lung disease.

Determined not to give up his own idea of the etiological principle of the system, the critic says, "In several forms the etiological basis fixed upon is one which can have no genuine causal relation to disease. Lactation, for example, is a physiological process, and cannot of itself be the cause of insanity." On this principle neither child-birth, nor sexual intercourse, nor menstruation can be the cause of insanity, though all authors put them among its possible causes. But this occurs near the end of the critique; and some amount of mental exhaustion was excusable, after so severe an effort.

I now most unwillingly advert to the manner and tone of Dr. Browne's critique, and the better to illustrate this I shall quote a few of his expressions. In the first sentence he speaks with contempt of "all the classifications" of "recent times" by saying that we have been "afflicted" by them. We know that the chief of the men who have so afflicted us have been Van der Kolk, Morel, Bucknill, and Maudsley, in addition to Skæ. After this I was prepared for much, but scarcely for such terms as these:—"stumbling and blundering," "hybrid-like this," "prodigious mixture," "piebald system," "hardly deserves criticism," "this system, like all other false systems," "meagre show of reasoning which these lectures present," "bungling," "end of his labours, turmoil and bewilderment," "who in his senses would make them a basis for classification," "no reasonable being could think of employing them in a practical classification," "Dr. Skæ's system breaks down miserably and at once, and Dr. Skæ himself helpless and forlorn," "such an exhibition," his reference to his friend who "survived the

attempt" to apply the classification; and as the last, out of many others, I shall quote the assertion which occurs as a sequel and corollary to his theory that Skae and his pupils can't take an inside view of humanity:—"The physician who limits himself to an outside view of humanity must remain below the level of an intelligent dog!" Now I am not going to characterise such expressions and such a mode of conducting a scientific discussion. I leave them to the candid judgment of my professional brethren. I was, when reading them, tempted to think that a courteous and well-bred critic could not, and would not, have used such language. They surely don't strengthen Dr. Browne's arguments. Most happily such expressions are seldom employed except by imperfectly educated men, untrained in argument, who, in attempting to support bad causes, lose their tempers. I am, I confess, so jealous for that medico-psychological science of which Dr. Browne speaks with such contempt, that I am grieved that a gentleman occupying his position of grave responsibility should have added them to its literature. I am also surprised that a gentleman, who is not now writing his first juvenile essay for a debating society, but who has contributed copiously to the medical literature of the day, and who, above all, has stimulated his assistants to do good work, so that the institution over which he presides has become most favourably and widely known, should have put out of his hands such a performance. If cutting weapons had to be used—and why should they not?—one looked for a keen blade, deftly driven between the joints of the armour, and not a bludgeon swung wildly round the head. He should have remembered that many things had been said—and well said—courteously and earnestly against Skae's system; and what we now wanted to hear was something better said and more original.

One theory has occurred to me—the most charitable I can think of—and that was suggested by Dr. Browne's fear as to the "undoubted danger that it (the system) may be somewhat widely adopted" "among the younger brethren engaged in the study of insanity." The theory is not complimentary to those younger brethren; but they must blame Dr. Browne, not me. It is that he has written the critique not merely, as he says, to expose for them the deficiencies of Skae's system, but has modelled his arguments, and adapted his literary style to what he supposes to be their capacity and tastes. I can only say that my opinion as to the kind of milk suitable for the medico-psychological babes differs *in toto* from that of Dr. Browne. On this

theory it is, perhaps, that the dogmatism of the critique is so strong and unwavering, the encyclopædic knowledge and mental philosophy so wide and deep as to be the envy and despair of the "younger brethren," not to speak of the seniors. The critic enters, without a halt, "the dark portals of metaphysics," and runs riot in its misty glades. He even condescends to state the real process of reasoning that should have led Skae to the construction of the system, and then touchingly says—"Alas! We should be wrong in ascribing to Dr. Skae as much logic as is involved in the above simple process." Ah! if this logician had only been at the procreation, what a progeny we should have had!

One other point I must allude to before I have done. Dr. Browne refers not only to Dr. Skae, but to the school which he founded, and the pupils that studied under him. He says that those pupils "perpetually parade" the system, "diligently vaunt" it, "obtrude it on attention," that its "great principles have been pronounced binding by an œcumenical council at Morningside, and he who profanely questions them places his promotion in jeopardy;" that they oppose the "study of mental symptoms," and have an "antipathy" to "everything mental;" and that "a philosophical problem is their detestation," &c., &c. He even ascribes to them Dr. Sankey's views as to the non-occurrence of primary mania. Now, these are a series of acts and sentiments ascribed to a number of gentlemen, not one of which would be acknowledged by them as correct. Can Dr. Browne prove any one of them? If not, I must take the liberty of repudiating them entirely. If those are the mere rhetorical embellishments of the critique, has not the Morningside school some reason to complain? Is it justifiable, in a scientific controversy, to employ such garniture?

Dr. Browne is quite right that Skae "would have been the last man to misinterpret the motives of any honest antagonist," and would have respected "hard-hitting, even if directed against his own progeny;" but in a critique on a system whose author had entered the eternal silence, surely there was no room for noise and bluster, no provocation to envy and evil speaking.

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*The Plea of Insanity in Cases of Murder. The Case of Tierney.* By D. YELLOWLEES, M.D. Edin., F.F.P.S.G., Physician Superintendent Glasgow Royal Asylum.

The following case occurred at the Glasgow Circuit Court, in September, 1875, and seems well worthy of record in the "Journal of Mental Science." It is especially important, as showing that the Crown, disregarding the formal definitions of the Judges, has practically recognised that insanity, like other diseases, varies greatly in degree, that it may modify without destroying legal responsibility, and that it may mitigate without annulling the penalty due to crime.

That the insane retain more or less knowledge of right and wrong, more or less sense of responsibility, and more or less power of self-control, are truths which have always been recognised by physicians; and they are the foundation of all asylum Government, as well as the basis of all moral treatment. The following case is merely the application of these principles in the administration of justice, and to an individual whose mental deficiency was not so great as to have obtained for him the benefit of asylum care.

While to alienists this case is thus but the natural and legitimate application of principles for which they have long contended in vain, it marks a wonderful and most welcome advance in our legal administration. It gives grounds for hoping that insane criminals may at length be dealt with on some reasonable and uniform principle, and that an end may be put to the utter uncertainty and the constantly-recurring errors which have made these cases a scandal on our administration of justice.

The facts of the case were simple, and were not disputed. The prisoner Tierney and his victim, Campbell, had been employed for years in the same coal-pit, and for months had worked together in the same "heading." No other collier worked in that heading, and these two filled alternately the hutch, or tram, in which the coal is sent to the surface. As coal-cutting is paid according to quantity, each man tries to send up as many hutches as possible; and as the full hutch must be removed before the empty one can enter the heading, each man in turn may have to wait for the other. Disagreements are thus apt to arise, and it was proved that these two men had repeatedly quarrelled about their hutches, the oversman of the pit stating that his interference had

been necessary to arrange their disputes, and that he had generally found Tierney in the wrong. On the forenoon of April 21st, 1875, the two men had been working together as usual, but Tierney suddenly left the pit, and some fellow-workmen, who were employed about twelve yards off and had heard no quarrel, were attracted to the heading by groans. They found Campbell in a dying state, with two large stones lying upon his body, and with many fractures of the skull, evidently caused by blows from a collier's pick. Tierney was arrested the same evening at some distance from his home.

While in prison awaiting trial, allegations were made as to Tierney's insanity, which led the Procurator Fiscal to desire a special medical examination and report as to his mental condition. This duty was entrusted to Dr. Robertson, of the City Parochial Asylum, Glasgow, and myself. We twice examined the prisoner in July last, and spent about an hour with him on each occasion, a week elapsing between our interviews. We also examined the warder who had charge of Tierney and a fellow prisoner who was associated with him, as to his behaviour in prison; while the prisoner's wife and the Roman Catholic priest informed us as to his previous history and general character.

This evidence was all brought to us at our request by the Procurator Fiscal, and it was impossible to get such facilities for fully investigating the whole case, as well for as against the prisoner, without feeling how important for the accused, as well as for the public, is the existence of a Public Prosecutor. Had Tierney's deed been committed in England no such aid would have been given him; and as his poverty precluded so full a defence, he would in all likelihood have been executed. No one can tell how many partially insane criminals have thus suffered wrongfully the extreme penalty of the law.

The result of our most anxious investigation was a Report, of which the following sentences formed part:—"His manner was peculiar, reserved, and suspicious, and his replies to questions were slow and evasive. He was fully aware that he is charged with murder, but denied all knowledge of the crime, and appeared quite easy and indifferent as to his serious position. His present mental peculiarities are quite consistent with the occurrence of a previous prolonged attack of insanity, with occasional subsequent relapses, and are even suggestive of it; but we were unable to dis-

cover any such mental aberration or defect as would justify us in certifying that the prisoner was insane at the time of our examinations." In transmitting this report, we directed special attention to the statement made by the prisoner's wife, which of course required confirmation, but which went to show (1) that Tierney's father and cousin had been insane; (2) that Tierney had been insane for a considerable time about sixteen years ago; (3) that he had had several subsequent relapses; and (4) that at no time had his mental condition been perfectly restored to what it was previous to the first illness. I may say here that the first of these allegations was not substantiated eventually, and seems to have been incorrect; the second was true, the third, though not proved at the trial, was apparently true, and the fourth was also probably true.

We again examined Tierney just before his trial, which took place at the Glasgow Autumn Circuit Court, before Lord Ardmillan, and found his condition unchanged.

The following details were elicited at the trial, and are important. The murder took place shortly after eleven a.m. on 21st April, 1875. About eleven o'clock a hutch filled by Tierney was taken away, and a witness, who saw Campbell take in the empty hutch, and heard the noise caused by filling it, was told by him that it was his fifth, and that Tierney and he had already filled four each. Another witness, who had heard the two men quarrelling about their hutch only a day or two previously, was the first to enter the heading after the murder. He saw a hutch full of coal and Campbell lying near it beneath two stones. When he asked the prisoner "What had done that," Tierney, who was putting on his coat, said, "It was me." Tierney had come to this witness a few minutes previously for a light to his lamp, and when asked, "What was wrong, that he required a light," he answered, "Nothing."

On his way from the heading to the bottom of the shaft, Tierney was asked by two witnesses, "Where he was going," or "why he was going so soon?" To one he answered that he was going home, and that he had filled *five* hutches, and to the other that some supports were required in his working, and that he was dropping off until they were put up. He had to wait for about ten minutes at the bottom of the shaft, till the engine resumed work, and he there had a conversation with the oversman of the pit, who ascended with him. He told him as his reason for leaving work at that unusual

hour that he was going from home ; and he also asked for a change of place in the pit, as he did not like his present working. The oversman promised him a change, and saw nothing unusual about him. As he hurriedly left the top of the shaft, he told the pitheadman, "quite coolly and collectedly," that he had filled *five* hutches. Neither did this man see anything unusual in his manner. "He had known Tierney for six years, and never noticed anything peculiar about him."

Tierney did not go home, but went to the house of a neighbour, and asked for his wife. Finding that she was out at work, he said to the woman of the house, "Where shall I hide?" The woman was afraid of Tierney, "for he looked excited, and he had a name of not being right in his mind," and asked what was wrong. She understood him to answer that he had "put the pick in Campbell." She said, "Dear me, was he meddling with you?" and he replied, "Of course." He then asked for water that he might wash, which was given him : the woman got his clothes from his own house, his son brought him some money, and he went off. He was apprehended the same evening at Rutherglen, on his way to Glasgow. There was nothing strange about his manner then ; and when charged with the murder, he only asked, "Who saw me do it?"

It was proved that the stones which were found on Campbell's body could not have fallen upon him from the roof, but must have been carried some yards. It was also proved that four hutches of coal had come to the pit-head from each of the men that morning, and that a fifth hutch, *bearing Tierney's mark*, came up next day.

Tierney had been regularly at work during that month, up to the 21st, on which day the murder was committed, with the exception of one day.

The medical witnesses, who had been allowed to remain in court, in order that they might hear the other evidence, were next called. It seems to me an error in the procedure, that the medical testimony should be taken before all the facts, for the defence as well as for the prosecution, have been proved in court. The present course hampers the witness, who cannot quote in his evidence, nor entirely found his opinion upon, facts which have been certified only by near relatives or interested friends ; and it no less hampers the prisoner's counsel, who can elicit replies pertinent to the case in hand, only by putting questions on hypothetical cases. It would be much

better for both sides that all the other evidence should be given first, the medical witnesses being present, and the facts being thus fully elicited, that the medical opinions founded on them should then be called for. The medical witnesses would thus be placed in their true position, and be better able to discharge their proper function—that of giving the correct medical interpretation of all the facts, irrespective of either side.

In the present case, fortunately, this erroneous mode of procedure was of no moment, as we were already perfectly familiar with all the facts of the case; but we did what we could to rectify it by frankly telling the prisoner's counsel, previous to the trial, and without any formal pre-cognition, our full opinion of the case, and how far we were able to go in the prisoner's favour. To our surprise, little or no use was made of this information; and it was at our own suggestion that, after the facts in the prisoner's favour had been proved in court, we were again examined, and were enabled to give him the full benefit of our opinion.

Our first evidence was thus confined, in great measure, to what we had ourselves seen, or to such opinions as we knew to have a secure foundation in fact. It was as follows—this and all the quotations being taken from the “Glasgow Herald” of September 17, 1875:—

Dr. Walter Walker Lennox, Hamilton Prison, said that towards the end of April he conversed with the prisoner for the purpose of ascertaining his mental condition, and found that he was perfectly sane. His reasoning faculties appeared to be good, and the only thing peculiar about him was his thorough indifference to his position. He was of ordinary intelligence.

Cross-examined by Mr. Lang—He had no doubt that Tierney was brought to him 16 years ago for examination, but he had no recollection of that fact.

Re-examined by Mr Muirhead—He had heard the evidence given, and had heard nothing to cause him to alter his opinion as to the sanity of the prisoner.

By the Court—When he last saw the prisoner there was no change in the condition of his mind from what it was at first.

Dr. D. Yellowlees, Gartnavel Asylum, had examined the prisoner in Hamilton Prison on two occasions, and conversed with him for nearly an hour on each occasion. He seemed a suspicious kind of man, casting furtive glances towards those with him, but there was no indication that his mind was not sound. Witness saw prisoner on the 14th inst., and he was convinced that he was a dour, sulky, repellent

sort of man, but that he was quite sound in mind. He had heard nothing that day to alter his opinion as to the sanity of the prisoner.

Cross-examined by Mr. Lang—Assuming that the prisoner was insane 16 years ago, that would not necessarily alter the opinion he had expressed. It depended entirely whether the man had recovered perfectly and completely from the original illness or not.

By the Court—When he examined the man he was aware that it was reported that he had been previously insane, and it was impossible to divest the mind of that fact. In these circumstances, what he saw was not inconsistent with, but was rather suggestive of former insanity, from which the man might not have completely recovered; but at the same time he saw no indications of existing insanity. If a man shows no signs of existing insanity, he held his recovery to have been complete. If a man continued at his work steadily, drawing his wages, counting his hutches, telling correctly the work he did up to a short time of a particular act, that would indicate sanity up to the particular time. If immediately afterwards he correctly stated the number of hutches he had filled, conversed quietly, and asked to be taken to the top of the pit, that would afford a presumption that he was then sane. There was a possibility of a man labouring under a mental deficiency doing all the duties of life without his neighbours observing insanity. If he heard in a case like the one before the court, that since the original attack there had been recurrent attacks of insanity that would lead him to regard the mental condition of the man as more unstable and uncertain than it would have been had there been no intermediate attacks.

Dr. Robertson, City Parochial Asylum, in conjunction with Dr. Yellowlees, examined the prisoner on the 20th and 26th of July, and his opinion was that on these occasions he was of sound mind, but of peculiar temperament, being suspicious and indifferent. Previous to the second occasion he learned that the prisoner had been insane 16 years before; but the fact did not change his opinion. It was quite possible for a man who had been insane to recover, and be able to go about his usual avocations with perfect sanity. There was such a thing as homicidal insanity, and persons suffering from it were easily excited, did things rashly, and had sometimes a disposition to homicide, coming on in paroxysms, the mind in the interval being calm and apparently rational. He would be inclined to think it very improbable that such paroxysms would recur in the case of a person who, though he had been insane, had for 16 years in the interval followed his usual avocation in a perfectly sane manner. He had heard the evidence as to the circumstances of Campbell's death, and in his opinion it did not go to show that the prisoner had done what was testified to in such a paroxysm.

Sheriff Spens then testified that the prisoner emitted his deposition while in his sound and sober senses, though his

manner was peculiar. In the deposition the prisoner admitted that he had worked with Campbell; but when asked whether he had struck him with a pick, he remained silent.

The exculpatory evidence was next led. It was proved that Tierney had been insane for a lengthened period about sixteen years ago, after the death of a child, and that he was about that time removed to Ireland as a lunatic, by the Hamilton Parochial Board. Tierney's brother-in-law testified that his insanity had been of a dangerous character, that "he was in the habit of taking a razor to bed with him;" that on one occasion he burned "all the clothes he could lay his hands on," and that he (witness) had returned to Glasgow with them, when they left Ireland, in order to protect his sister. The same witness stated that for the last fourteen years he "had noticed nothing in prisoner's conduct, except that he was a dull, stupid, unsociable man," whereas before this illness he had been cheerful and sociable.

There was no distinct proof of any illness since the first, although I think proof might have been found of at least one distinct recurrence of insanity, about three years previous to the murder, when two of his children died. I am unable to see why, in a case like this, the wife's testimony should not be admissible as to the past history of her husband. Let her statements be carefully tested, and let there be such reservation or deduction in receiving them as the other evidence seems to demand; but it appears strange deliberately to reject the witness who must be the best informed as to the past history and habits of the accused.

The only testimony brought by the defence as to the recent mental condition of Tierney, which was of any importance, was that given by the Roman Catholic Priest. It was as follows:—

Rev. John Shaw, R. C. clergyman, Rutherglen, had known prisoner for seven or eight years. He always thought he was not altogether right in his mind or accountable for his acts. He would sometimes come to speak to witness, and when his mission was over he would stand without speaking like a person distracted. Witness was one day out in Cambuslang and called on prisoner. He came out, and came along with witness for some distance. He ordered him to go home. He said nothing, but continued to accompany him all the way to Rutherglen. When he reached witness' house, he went away home again without saying a word.

By Lord Ardmillan—My opinion was that he was of weak intellect. To receive the privileges of religion a man requires to be sane, and I

refused him those privileges on that account. I thought he was not able to perform a humane act. He was unable to form a correct judgment. I have not seen him since his apprehension. I saw him some time previously. The neighbours were blaming his wife for leaving him ; but I told them not to blame her, as her husband was insane, and she was in danger of her life.

By the Advocate-Depute—When he answered me in course of conversation, his answers would be rational enough, but generally speaking he would not answer me at all. He was a silent, morose, taciturn man. He was never violent. Q. What led you to believe that he would possibly use violence towards his wife?—A. From my intercourse with him, I thought he was not a man of sound mind.

It amounts, like this gentleman's testimony to Dr. Robertson and myself, to a strong and evidently sincere conviction of Tierney's insanity, based upon his peculiarity of manner, and his having, on one occasion, persisted in silently accompanying the witness to his house, and evidenced by the fact that he, as his clergyman, had refused him the privileges of religion. Unfortunately, none of Tierney's fellow-workmen in the pit, where he had worked four or five years, were brought forward who could express a similar opinion ; while several of them declared that they had never seen anything peculiar about him. It is difficult to see how the reverend gentleman could have extended the privileges of religion to a man, whatever his mental condition, who was so notoriously cruel to his wife that she had repeatedly been compelled to leave him, and that, on at least one occasion, the priest had himself sanctioned this course.

I certainly think that the best exculpatory evidence was that given by Dr. Robertson and myself, when, at our own suggestion, we were recalled. The admirable questions put by Lord Ardmillan elicited a definite, and, I believe, a true picture of the prisoner's mental condition.

Dr. Yellowlees, recalled and examined by Mr. Lang, deposed—I have heard most of the evidence, and the effect of it on my mind is that it enables me to express the opinion I had formerly founded on the history I had ascertained for myself ; formerly, I was speaking entirely as to what I had seen with my own eyes. That opinion was that the peculiarity which this man has, is not his natural temper or temperament, but is distinctly the result of his former attack of insanity, which left in the man's mind a certain amount of weakness, possibly confirmed by subsequent casual attacks of insanity. Q. You would be disposed to say that the recovery has not been complete?—A. At all events, it has left this amount of peculiarity.

The Advocate-Depute—Does anything you have heard lead you to alter the conclusion at which you previously arrived, that he was a sane man?—A. When I examined Tierney I saw nothing that would enable me to certify that he was insane. From what I have heard of his history, I believe that this amount of mental peculiarity may have lessened his power of self-control and self-regulation. I do not think that mental peculiarity was such as would make him the mere helpless instrument of his own impulses.

Lord Ardmillan—Supposing there was no actual access of mania, the mental deficiency of the man might have removed his power of self-control, so that an amount of irritation which would not have enraged another man might have enraged him very greatly?—A. Quite so. Q. Another view of the case is that what you have heard of his history makes a recurrence of an actual access of mania fairly presumable?—A. I think had there been a real access of mania upon the occasion referred to there would have been just before it some indication of the act other than the mere act itself. In the former attacks the mania had not been of that impulsive momentary character. Q. Bearing in mind that it has been proved that, in the case of the former attack, he was for a considerable time in a state of insanity, what is your inference from the fact that since this act on 21st April there is no proof of insanity, and that he is now sane, confessedly?—A. I can scarcely answer that question ignoring the fact that I believe there have been inter-current attacks of insanity of a brief kind. Q. You think that possible?—A. I believe from the history of the man that there have been since the attack sixteen years ago certain casual exacerbations of his condition. I think there have been periods when his mental condition was worse. I don't say that this act was committed at such a period. Q. If you admit that there have been certain recurrent exacerbations of his mental condition, a possible access of mania at the date of the act is rendered more possible?—A. It is rendered more possible. Q. Subsequent sanity at this moment is not inconsistent with that supposition?—It is not. Q. If he knew and stated before the act what work he had been doing, what he did then, and after the act made an accurate statement of what he did, would that alter your opinion as to the possible access of mania?—A. It does not necessarily disprove it; but it makes it unlikely. It is an unfavourable fact, because had there been an access of mania there would have been some indications of it, as on the former occasion. Q. If he really were in a position of liability to access of mania, a trifling irritation might bring it on?—A. It might call it forth. As a matter of fact, in his previous history the death of his children was the occasion for the most part.

The Advocate-Depute—Assuming that the act was committed by the prisoner, and that the motive for the act is perfectly apparent, and that the act he did was one by which the end of the motive could be obtained, would that, in the witness' mind, suggest the idea of

recurrence of a paroxysm of homicidal mania?—A. These facts are suggestive of sanity. They do not disprove insanity. I wish to put it both ways.

Lord Ardmillan—If the motive were merely to get credit for another hutch of coal, would that be an adequate motive?—A. It would show that the man's power of control over his conduct was defective.

Dr. Robertson, recalled, said—The evidence I have heard corroborates the opinion that there is in this man a certain mental deficiency consistent with sanity. I think this mental deficiency is referable to the previous attacks of insanity. Q. And that the recovery has not been complete?—A. The restoration has not been complete—not so much with regard to his intellect—as the moral powers or his mind.

The Advocate-Depute—You mean that, in consequence of that previous attack of insanity, his power of regulating his actions has been somewhat weakened, although his mind can still judge of the nature of his actions?—A. That is exactly what I mean.

The Advocate-Depute, Professor Muirhead of Edinburgh, then addressed the jury for the prosecution. He pointed out that the chief question for their consideration was the prisoner's mental condition. If sane, his act was murder; if insane, of course they would acquit him on that ground. But he argued that there was no ground for thinking him insane at the time the act was committed, either from the recurrence of his malady, or from an accession of homicidal mania. He said however "there was an intermediate view that might be taken. They might, upon the evidence, feel themselves persuaded that, through the operation of disease at an earlier period, there had been, as regarded this man, a diminished power of regulating his actions. What would be murder in a man whose mental faculties had never been affected by disease, might, in the case of a man who had been so affected, and whose mental faculties were for the time obscured by disease, be looked on more leniently. If the jury, looking on all the evidence, felt that they could conscientiously pronounce a more lenient verdict, he asked them to find that the panel was guilty of culpable homicide."

The Counsel for the prisoner argued that insanity had been fully proved, that the deed was the result of a purposeless homicidal impulse, and that the prisoner must be acquitted on the ground of insanity.

In summing up, Lord Ardmillan went carefully over all the evidence, especially as regarded the prisoner's mental condition; and instructed the jury as to what was required to establish the plea of insanity. He said: "Liability to

sudden irritation, susceptibility to provocation, sullenness, ill-temper, silence, gloom—none of these would do. All these might exist without that deprivation of reason, that shattering of the powers of the mind, which constituted insanity. But, if there was a recurrence of the disease, depriving the man of the power of controlling his actions, impelling him irresistibly to commit certain actions, that excluded responsibility.” He did not favour the suggestion of the prosecution, “that the man’s control over his own mind might have been so weak as to deprive the act of that wilfulness which would make it murder;” but indicated to the jury that they should find him either sane or insane, and give their verdict accordingly.

After an absence of three quarters of an hour the following verdict, evincing, in my judgment, a very honest and accurate appreciation of the evidence, was returned:—“The jury unanimously find the panel guilty of murder as libelled, but strongly recommend him to mercy on account of the excitement which might result from previous insanity.”

The prisoner was then sentenced to death in the usual way, listening to his doom with apparently stolid composure. This was his demeanour throughout the trial, except during the evidence as to the facts of the murder, and as to Campbell’s injuries, when the restless movements of his hands revealed some anxiety.

From the first, Dr. Robertson and I had thought Tierney worthy of punishment, though not of death, and, at the conclusion of the trial, we offered to join in a recommendation to the Home Secretary on his behalf. We did so, a few days later, setting forth our opinion that, while his mental condition did not entitle him to acquittal on the ground of insanity, yet it was such as should mitigate his punishment, and save him from the extreme penalty of the law. The result of this, and other representations on the prisoner’s behalf, was that a special medical inquiry was ordered by the Home Secretary. The condemned convict was examined by Dr. Briscoe, the Medical Inspector-General of Prisons, in conjunction with the medical officers of the Glasgow prison; and the ultimate result was the commutation of his sentence to penal servitude for life, after he had lain under sentence of death for a fortnight.

*Remarks.*—The result was just and satisfactory, although so tardily and wrongly reached.

There was no ground for alleging that there had been a return of the insanity under which Tierney formerly laboured. The form of his illness, on each previous occasion, was melancholia, which made him restless, sleepless, taciturn, and suspicious. There was no such history on this occasion, either before or after the deed ; nor does that form of insanity come and go thus instantaneously.

Neither was there any reason to attribute the murder to a blind, restless impulse of homicidal mania. There was nothing in the history to sustain such a theory. The men were known to have frequently quarrelled about their hutches, they had been heard quarrelling about them only a day or two before the murder ; and immediately after it Tierney claims Campbell's hutch as his. His reply, " It was me " to the witness who first entered the heading, and asked, " what had done that," was not the fearless answer of a man who had just accomplished what an insane impulse had told him must be done. It was rather the defiant desperation of a criminal who had hoped to escape unobserved, but was detected almost in the act through the moaning of his victim. The rest of his behaviour, the placing of stones on Campbell's body in order to conceal, for a time, the real cause of his injuries ; the hurried escape from the pit ; the plausible and varying excuses he gives for leaving work so soon ; the request for a change of working ; the persistent lie about the hutch ; the avoidance of his own house ; the anxiety to hide ; the rapidity with which he changed his clothes and made off—all this, while not necessarily precluding insanity, certainly seems the conduct of a conscious criminal, and not of an insane person.

His suspicious and half-repellent tone during our interviews with him ; the guarded way in which he fenced off direct questions by general answers, and the promptitude with which he modified a reply, if, in spite of his caution, it seemed capable of a construction adverse to him, all gave the same impression.

The murder was neither caused by a recurrence of melancholia, nor by the fierce impulse of homicidal mania. It was simply the result of evil passions uncontrolled ; and the only excuse for the murderer was that his power of controlling them might have been weakened by previous disease.

On this ground the jury recommended him to mercy ; and on this ground, for there was no other, was the capital sentence commuted.

Had the jury regarded Tierney as insane, they would have acquitted him on the ground of insanity. Had he been deemed insane by the Home Secretary, he would have ordered his detention during Her Majesty's pleasure. Both the jury and the Crown obviously regarded his mind as in some degree impaired, and therefore they did not measure him by the same standard of accountability, nor deem him worthy of the same punishment, as an ordinary criminal. It is most satisfactory to find the great truth of partial insanity thus definitely and practically recognised. Half the difficulties and errors in this department of jurisprudence have arisen from wilfully ignoring it.

Tierney's case contrasts instructively with that of the lunatic shipwright, Blamfield, who murdered a fellow-workman at the Chatham Dockyard, only a few days before. Although the circumstances of the murders were remarkably similar, they apparently reveal quite different mental conditions. Blamfield's act seems to have been the result of a sudden accession of insanity, by which the man's whole nature was for a time changed and dominated, and of which he was apparently but the blind instrument. Tierney's deed was the outcome of the evil passions common to all men, sane or insane, which his weakened mind did not adequately control.

In Blamfield's case, the legal directions given to the jury, were based on the often-quoted definitions of insanity by the judges ; but so contrary did these definitions seem to what justice required in the case, that the jury deliberately disobeyed the instructions, and acquitted the man on the ground of insanity. Few now regard these definitions as truly representing our knowledge, and in his instructions to the jury in Tierney's case, Lord Ardmillan distinctly recognises the power of controlling our acts to be as essential an element of sanity and responsibility as the knowledge of their nature and consequences.

The recognition, by the jury and by the Crown, of the existence of partial insanity, is a yet greater advance.

The law is slow to admit the fallacy and the danger of the rigid mathematical line, by which it would divide mankind into two classes only—the sane and the insane, the responsible and irresponsible. But, between these two classes, there is an intermediate multitude unrecognised by the law, who belong to neither class, while having affinities with both, and who show in most variable mixture traits both of sanity and

insanity. These intermediates may do much, or perhaps all that legally sane men can do in the daily work of life, and their weakness may be so concealed by the routine of habit, or may be apparent on occasions so few and brief, that their neighbours scarcely observe it. It may be periodic, irregular, or constant in character; may have reference to special subjects or individuals; or may be evinced merely by oddity, irritability, or obtuseness. Its degree and its expression may vary greatly, not only in different individuals, but in the same individual at different times; occasionally no weakness can be detected by the most careful observation, at other times it is apparent to all. Yet the habitual daily lives of such people may not differ materially from those around them, and only the members of their own households, or those in daily contact with them, may recognise that they are not like other men.

It is these unfortunate intermediates who occasion so much confusion and uncertainty in our criminal courts, when the plea of insanity is urged. An intermediate at the criminal bar must be regarded as either sane or insane. Hence the testimony as to his mental condition is often conflicting, for it will depend on the aspect of his character which each witness has seen; and the sentence he receives must of necessity be unjust, for if he be deemed sane it will be too severe, and if he be deemed insane it will be too lenient.

This confusion and error must continue until the law recognises that there is a condition of partial insanity, which may disturb, without destroying, a man's appreciation of his acts and their consequences, and may lessen, without annulling, his power of self-control. This partial insanity must be held to imply a modified responsibility; and the evil deeds of such a man must entail a modified punishment.

The recognition of this doctrine in Tierney's case is most satisfactory. It has been recognised by Scottish criminal courts in at least two previous instances. The case of McFadyen in 1860, and of Milne in 1863—in both of which the capital sentence was commuted to penal servitude for life, on the ground of the prisoner's mental condition. [See Irvine's *Justiciary Reports*, vol. iii, p. 650; and vol. iv, p. 301. See, also, a valuable summary of such cases by Sheriff Spens in the "*Journal of Jurisprudence*," for November, 1875.]

It was not surprising that lawyers should have held so tenaciously to their imaginary division and erroneous definitions. Some physicians have done much to justify them.

They have been so acute that, with prophetic eye, they could detect insanity in its obscurest beginnings, and could evoke from the slenderest data the direst picture of irresponsible disease; or they have been so charitable that they were ready to rush to the rescue of a criminal when insanity was but whispered, and to throw over him, with due flourish of trumpets, the shield of their detective wisdom. Such conduct is most mischievous; it lessens the due weight of medical evidence, it obstructs justice by bringing the plea of insanity into contempt, and it too often gives pretext for the false and ignorant sneer that insanity can generally be proved, if there be money enough to prepare the defence.

But lawyers have a better reason for their tenacity than exceptional folly like this. To lower the general sense of responsibility for wrong-doing, would be a public calamity so grave, that it cannot be too carefully guarded against; and this evil could not fail to result if the plea of insanity were too lightly accepted. On the other hand, what can tend more to lessen the public respect for justice, and the public confidence in its administration, than to see a man solemnly condemned as a criminal, and afterwards practically acquitted as a lunatic, by being sent to an asylum during Her Majesty's pleasure?

The acquittal of every criminal in whom any degree of mental defect could be discovered would be both unjust and dangerous, nor is the common excuse that confinement in an asylum is the same as perpetual imprisonment, at all sound. It is untrue as regards the individual, it is unsafe as regards other intermediates who might, by his conviction, have been deterred from similar crimes; and it is a violation of the public sense of justice, when a criminal escapes merited punishment.

The suggestions made in the interest of the prisoner by the Advocate-Depute, that Tierney's power of controlling his actions had been so weakened by the previous diseases, that the jury might possibly find him guilty of culpable homicide, rather than of wilful murder, deserves attention, as one mode of solving the difficulty occasioned by intermediate criminals.

Perhaps it evades the difficulty, rather than solves it, unless, indeed, the principle were adopted that in every case the jury should consider the character and motives of the murderer, as well as the circumstances of the deed, and should specify, as in some other countries, the degree of his guilt. Whether this would not be in itself more equitable, and in every way

more satisfactory, than the utterly uncertain and irregular way in which the Royal clemency is now dispensed, is not a question for this paper.

I have suggested, as a simple way of meeting the difficulty, that when the jury cannot acquit a prisoner on the ground of insanity, and yet are satisfied that there is some mental defect, they should be able to find him "Guilty, but *entitled* to mercy on account of his mental condition." This finding should save the prisoner from the extreme penalty due to his crime, whatever the crime may be, and should leave it entirely to the judge to determine what mitigation of punishment the mental condition demands.

It has been said that, if the power of barring the capital sentence were in the hands of the jury, they would be too apt always to exercise it, and that the power of mitigating the sentence should be left solely with the judge, when the jury have unanimously recommended the prisoner to mercy on account of his mental condition. Possibly this would be better; but either course would put an end, in great measure, to the present uncertainty and error. It is a great and increasing evil, that the solemn sentences of public criminal courts should be continually reviewed and altered by the Secretary of State, for reasons which the public never know.

It may of course be objected that no man can accurately gauge the accountability or self-control of his fellow man, and that to adopt this suggestion would give only an approximation to justice. This is perfectly true, but it is the nearest approximation we can make. It recognises at once what is needful for society, and what is just to the individual, by awarding punishment to his crime and extending mercy to his weakness. Nor could any material wrong be occasioned, if the Judge failed to estimate with perfect accuracy the relative proportions of wickedness and weakness in the prisoner's mind. A sentence unduly severe could probably never be carried out, as the further development of insanity in prison would quickly procure the prisoner's removal to an asylum for the insane. On the other hand, even after the most lenient sentence, the liberation of the prisoner should be subject to satisfactory guarantees as to his future care. Practically then this approximation would secure substantial justice alike to society and to the individual; and what is all human justice but an approximation, but a rough endeavour after the perfect justice which Omniscience alone can render?

*Case of General Paralysis complicated with severe Unilateral Epileptiform Attacks, Temporary Hemiplegia, Aphasia, &c. Autopsy.* By W. JULIUS MICKLE, M.D., Medical Superintendent, Grove Hall Asylum, London.

George H——, a Quarter master-Sergeant in the 38th Regiment, was admitted into Grove Hall Asylum on the 12th of June, 1874. It was stated that the attack had then been of between one and two months' duration; that it was supposed to be aggravated, if not induced, by tropical climate;\* and that he had become epileptic. Previously to his admission he had been in a state of active maniacal excitement, incoherent, noisy, destructive, violent, and the subject of delusions of a grandiose character.

*On Admission.*—Height, 5ft. 10½in.; weight, 161lbs.; married; æt. 34. Is moderately nourished, possesses a powerful muscular development, and fine soldierly carriage; skin fair, complexion rather pale and sallow, irides bluish-grey, pupils equal, pulse varying from 108 to 120. There are no signs of constitutional syphilis. State of tongue, speech, and gait characteristic of incipient general paralysis. Sometimes he will not answer questions, or only in an angry tone; at others he replies by a furious shout. The irritability is most intense, and he makes frequent violent attacks upon attendants or patients. He declares that he "is Colonel of the Regiment, has £23,000, and is about to marry the daughter of a peer."

Treatment had only the effect of moderating in some degree the excitement, the restlessness, the irritability, the insomnia, and the disposition to outbursts of furious threatening, and of overt violence. In fact, the maniacal symptoms were undoubtedly in part the outcome of the epileptic neurosis, which also manifested itself at this period in occasional nocturnal epileptiform attacks.

To pass rapidly over this portion of his history we need only add that subsequently he had hallucinations of hearing, declared he was in communication with the Deity, and received constant audible telegrams from heaven; that in August he became far more quiescent and tractable, and in September was able to occupy an associated dormitory. The fits were then almost in abeyance. On the morning of Oct. 14, 1874, a succession of severe epileptiform convulsions occurred. When visited he was in one of these attacks, which affected the right side, especially the right eyelids and face, the head and eyes being turned completely to the right

\* This is doubtful. He was admitted into hospital on six occasions in India, between 1862 and 1870, for fever, diarrhæa, ague; and for cerebral symptoms in England, in March, 1874.

in clonic spasms; the occipito frontalis was implicated, especially on the right side, and also the right side of the neck, both sides of the abdomen (but more particularly the right); the right pectoral muscles also, but only to a slight degree. He was semi-conscious, and the pulse was small, feeble, compressible. Catheterisation and enemata relieved the loaded viscera, but were required during several days subsequently, especially the enemata. When he was again seen, an hour after the above attack, dextral hemiplegia was present; his replies were quite unintelligible, and he attempted in vain to protrude the tongue, or to raise himself up when requested to do so. The right side of the face was flattened, the right side of the mouth incompletely paralysed, as well as the right eyelids (orb. palp.), nostril, and side of tongue; the right palatine arch was the lower and narrower, and the uvula tip was curved towards the right side. He could swallow. The right arm and leg were much palsied; pupils sluggish, the right one the larger. Temperature—right axilla,  $99.5^{\circ}$ ; left ditto,  $99.6^{\circ}$ . The convulsive attacks continued for several days (until the 22nd), there being several successions of severe fits every twenty-four hours, besides a number of single convulsions. Throughout he was examined frequently, and full records were made, but only the more salient points need be reproduced here. The convulsive attacks described were some of those which occurred under my own observation. On the 15th the hemiplegia continued; there was moderate conjugated deviation of the head and eyes towards the left side; the respiration was stertorous, but he could be roused from the state of semistupor; and the pupils were dilated, sluggish and equal. A fit was then witnessed the moment after it began. The right side of the mouth and face and the right eyelids were in violent convulsion, the right nostril and face drawn up, the head and eyes turned completely to the right, the occipito-frontalis was moderately affected; the right arm was strongly convulsed, the elbow bent at a right angle, and the sheet seized between the thumb and forefinger; the right leg participated to a less extent, and the abdomen and chest to a slight degree only. As the spasm died away the mouth, eyes, and fingers were still working slightly. Ten minutes later he was noticed in another fit, which was confined to the right side of the mouth and face, the eyes, right forearm and arm. Slight twitchings of these parts persisted for some time after this fit. On the fifth day there was another

attack of hemispasm under observation. It affected the right angle of the mouth more severely than any other region, and died away last at that part. The head and eyes were turned to the right, and the right pupil was the wider of the two. This attack extended to the right arm and leg. A few minutes after it had completely subsided the mouth was again suddenly and violently jerked to the right, as well as the face generally, and the eyelids and eyeballs. But the spasm did not diffuse itself beyond these parts in that instance, although it was of several minutes' duration, as usual. Again, it died away last at the mouth. Temp.  $100^{\circ}$ . On the sixth day the paralysis was diminished; it was most marked in the arm, less in the leg, and only moderately in the face and tongue. Had had no fits for several hours; the left pupil slightly the larger. Temp., right axilla,  $100.9^{\circ}$ ; left ditto,  $100.3^{\circ}$ . Next day the patient was drowsy and dull, but was free from convulsion, and the hemiplegia was lessening. Temp., right axilla,  $101.7^{\circ}$ ; left ditto,  $101.6^{\circ}$ . On the ninth day he was brighter, and the palsy was still disappearing. On the twelfth day he could grasp with his right hand, could walk across the room, but swayed towards the right side, and now and then would have fallen if not supported. In walking the right foot was raised high, the heel passing just above, and close to the left inner malleolus, and this foot was planted in front of the left one, so that his course swerved constantly towards the left in progression; the gait also tended to become hurried, awkward, and confused. Slight tension of the facial muscles was now observed on the right side, and the mouth was drawn a little to the right. Temp., right axilla,  $97.1^{\circ}$ ; left ditto,  $97^{\circ}$ . The hemiplegia gradually disappeared after this date, and the speechlessness was succeeded by aphasia, partly amnesic, and partly of the nature of heterophasia; the old defect of articulation, the broken, hesitating character of utterance, being also marked. Though he understood simple questions he gave no replies until he was pressed to speak, and the successive answers to the same reiterated query were very different. For example, when thrice pressed to tell his name his replies were as follows:—(1) "My name is right—John." (2) "Man." (3) "Mankin." When requested to mention the number of his regiment he replied at first in an unintelligible jumble of words, and subsequently said, "fifty-eight." He was shown a pencil, and was asked what it was. He said, "What's that for,—regiment,—regiment,—is the,—belongs to you,—to

you,—to you,—now, sir.” Sometimes longer portions of sentences relevant to some subjects were uttered, but when he had found his own name he simply repeated it in reply to every question. It was evident, however, that he understood plain questions. This form of aphasia continued during the rest of the patient’s life. For instance, a few weeks before death he returned three different and irrelevant replies to the thrice repeated question, “How old are you?”—(1) “Long” (2), “eight” (3), “about two nights.” He remained dull and somewhat obtuse, void of emotion, and would stand quietly for hours in one posture if not moved, gazing idly before him, or with his sallow, mask-like countenance bent upon the ground. He was tractable, and readily did what he was desired, so far as his failing power of comprehension permitted him to understand directions. Convulsive seizures broke in upon this condition in January of the present year, but subsided, leaving a transient slight dextral hemiplegia. At the end of February night fits occurred, and he became weaker and bedridden; the fits continued, and on March 11th and 13th he passed into a condition analogous to the status epilepticus, the convulsions affecting the right side only, just as upon former occasions; and he died on March 13th, from the combined effects of the progressive general paresis and the epileptiform attacks.

*Autopsy*, 80 hours after death.—Permission was obtained to examine the head only, and the description of the morbid appearances is greatly curtailed here. Calvarium not quite symmetrical, the right half appears to be the more capacious in front, but this is not the case at the posterior region, where the right occipital and the posterior half of the right parietal bones have lost their normal outward curve. Numerous vascular foramina give a worm-eaten appearance to the bones along each side of the median line passing through the sagittal suture. The posterior half of the cranium is the thicker; there are bluish areas on the inner surface of the bones from fulness of the diploe; the calvarium is dense, its upper portion removed at the usual level, weighs 16½ oz., and is replaced with ease. Dura mater injected, and slightly adherent to the skull; sinuses full of dark clot and fluid blood; sphenoid angle small; no unnatural appearance in the arteries at the base; firm interlobar adhesions, and arachnoid thickened at the interpeduncular space. No thrombosis or embolism discovered in the vessels in or near the Sylvian fissure. The walls of the fourth ventricle have an

uneven, granular, sanded appearance. The vessels are deeply injected, and the meninges unusually thick and tough over the pons Varolii and medulla oblongata, and on section these parts are seen to be hyperæmic, of a lilac hue, and their vessels dilated. Cerebellum pinkish and hypervascular. The veins of the cerebral meninges are gorged with dark blood, except over the anterior frontal regions, where the venous engorgement is much less, especially on the left side. The left frontal gyri are somewhat wasted, and their anfractuositities widened, but only to a moderate degree, and the pia mater covering this part is slightly infiltrated with serum. The wasting involves all the left frontal and the ascending parietal gyri, and the lateral surface of the superior parietal lobule slightly. The membranes generally are thick, tough and highly vascular, and the first two of these changes are *much* more obvious over the superior and lateral surfaces of the *left* side of the cerebrum than elsewhere. The membranes do not strip off readily; they are adherent to the cortical grey matter over certain areas where a superficial layer of the cineritious neurine separates along with them from the prominences of the convolutions. On the *left* side this separation of the superficial grey matter along with the adherent membranes is found in the most extreme degree over the following gyri:—Second external annectant; angular; posterior part of supra-marginal, and of second and third temporo-sphenoidal; the posterior half of the first frontal, and the greater part of the second frontal. It is found in a less degree over the other annectant and the third frontal gyri; still less at the ascending frontal, and absent at the ascending parietal. On the inner surface of the left hemisphere these pathological alterations are well marked at the parieto-occipital fissure, decided, but less, near the anterior extremity, and still less in the frontal and parietal regions above the fissura calloso-marginalis. They are nearly universal on the inferior surface of the left cerebrum, including the orbital gyri where the adhesion is close. On the *right* side the meningeal adhesion and the decortication of the grey matter are absent over the occipital and annectant gyri; slight on some of the parietal prominences; very slight over the temporo-sphenoidal; moderately well marked over the frontal gyri, especially the superior surface of the first frontal, the inner aspect of which also presents a slight amount of the same change. The right orbital surface is not at all implicated.

The entire encephalon is softer than natural, and readily breaks down under moderate pressure, especially the left hemisphere. The layer of grey matter is rather thin on the left side, its strata not very obvious, its larger vessels quite visible to the naked eye, and its colour ordinary. White medullary substance hyperæmic, puncta numerous, vessels dragged from their channels with ease; the vascular injection and dilatation are most marked in the posterior regions, and also, but to a less extent, in and about the left corpus striatum. No special localised lesion of the left third frontal gyrus, or of the insula, or corpus striatum. Weight of encephalon, with the pia mater and arachnoid still investing it,  $55\frac{3}{8}$ ozs. After separating the greater portion of these cerebral meninges, the right hemisphere weighs  $24\frac{3}{8}$ ozs., and the left  $22\frac{1}{8}$ ozs. Cerebellum  $5\frac{3}{8}$ ozs. Pons and med. obl., barely 1oz.

Specific Gravity. On the *left* side. Averages. Cortical grey matter of tip of first frontal, 1039; of third frontal,  $1041\frac{1}{4}$ ; of ascending frontal,  $1041\frac{1}{4}$ ; of tip of occipital,  $1041\frac{1}{4}$ . White medullary substance of first frontal,  $1040\frac{1}{2}$ ; of third frontal, 1042; of ascending frontal, 1042; near the tip of occipital lobe,  $1041\frac{1}{2}$ . On the *right* side the grey matter of the ascending parietal gyrus has a specific gravity of 1040, and the corresponding medullary tissue,  $1041\frac{1}{2}$ . Portions containing about equal quantities of grey and of white substance are also tested. Their sp. gr. when taken from the tip of the right first frontal is 1039; from upper part of right ascending frontal, 1041; from tip of right occipital, 1043.

*Microscopical examination of prepared sections.* The brain substance, particularly the left third frontal gyrus, does not take the carmine stain well. In the cortical layer of the left third frontal convolution some of the vessels are twisted, dilated and thickened, and deposits are here and there observed between the adventitia and the sheath. In parts there is some proliferation of the nuclei of the neuroglia and vessels. Some of the pyramidal nerve cells are granular, and their nuclei obscured; some are quite loaded, others more healthy. Fatty-like scattered *débris* of granular cells is also observed, and the same appearance is also seen in most of the sections from other gyri. The anterior portion of the left first frontal gyrus stains better. In it only a few of the cerebral vessels are dilated, or tortuous; the pyramidal nerve cells are small; a few are slightly granular or cloudy, with obscured

nuclei. The left ascending frontal gyrus presents much the same appearances as the convolution last mentioned, but a greater number of the vessels are thickened, and have hematoidin and granular deposits between the sheath and adventitia, a few also are shrunken and surrounded by a vacant perivascular space; and the neuroglia is well developed. At the posterior extremity of the left occipital lobe the morbid changes are slight; most of the pyramidal cells are healthy, a few are slightly granular, and there are many oval or rounded cells which exhibit the same slight alteration.

*Remarks.*—(1.)—*The weight of the brain.* When the brain invested in its two inner tunics was placed upon the scales at the moment of removal from the cranium the weight was found to be 55 $\frac{3}{8}$ ozs., which is larger than is usual to general paralytics, and falls within the higher limits often found in epileptics. But after the hypertrophied and thickened pia mater and arachnoid had been stripped off to a considerable extent the weight of the encephalon was reduced by 2 $\frac{1}{2}$ ozs. The exact weight of the cerebrum could not be obtained by the method of Tiedemann in consequence of the partial separation of the superficial layer of the grey cortex along with the meninges. Instances of large brain weight occur now and then in general paralysis, particularly when death takes place in the earlier stages, and it is to be remembered that this patient perished when mental derangement was scarcely of one year's duration. Mr. W. S. C. Clapham\* has given the statistics of a large number of brain weights in different classes of the insane, and thus has supplied a void in the masterly paper on the weight of the brain by the late Dr. Thurnam.† The maximum brain weight amongst the 113 male general paralytics mentioned by the former was 58ozs., and the average about 46 $\frac{1}{2}$ ozs.; whilst the average in 31 male epileptics was about 49 $\frac{1}{4}$ ozs., and the maximum 56ozs. In the general paralytic, forming the subject of this paper, the brain weight, therefore, was far from rare or unprecedented, though it was unusual, and all the more so inasmuch as softening co-existed.

A more interesting feature was the decided inequality in the weight of the two cerebral hemispheres, that of the left side, the one opposite to the hemispasm and hemiplegia, being 22 $\frac{1}{8}$  oz., and that of the right 24 $\frac{3}{8}$  oz.—a difference of

\* West Riding Rep., vol. iii., p. 294.

† "Journal of Mental Science," April, 1866.

2¼ oz. When weighed separately, each hemisphere had lost a little grey matter by its detachment with the meninges, and the left more than the other; but allowing a few grammes for this, the difference was very considerable, as just stated.\* Nor was it an instance of natural congenital difference between the weights of the respective sides of the brain. The lesser weight of the left cerebrum was evidently due to the morbid change, which was more extensive and advanced on that side, and which, amongst other effects, had induced moderate wasting of the left frontal and of some of the left parietal gyri.

2.—*The Specific Gravity.* As in the healthy brain, so in this, the specific gravity of the grey cortex was found to range higher as the examination proceeded from before backwards over the upper convex surface of the cerebrum, though the difference between the anterior and posterior gyri was less in this respect than usually obtains in the healthy cerebrum. The cortical substance in the anterior and middle regions on the left side was thinner, but of slightly higher average specific gravity than that of the corresponding regions on the right side, whilst as regards specific gravity, the reverse condition obtained in the occipital lobes. Dr. Bastian† finds that the average specific gravity of the cineritious neurine is slightly higher in the left than in the right cerebrum, and if this conclusion be accepted, we need seek no further explanation, in our case, of the facts relating to the specific gravity in this respect. This conclusion, however, is by no means universally applicable to the healthy brain.‡ Nor will a consideration of the absolute specific gravity avail us much in this investigation. It is difficult to obtain a reliable standard of comparison, inasmuch as the differences between the statements of various observers are very considerable. While Dr. Bastian gives the average specific gravity of the grey *cortex* in the insane as 1032½, Dr. Bucknill makes it 1037, and Dr. Skae 1039<sub>1</sub><sup>1</sup>; and the same three writers give the specific gravity of the *medullary* substance,

\* Dr. Boyd has stated that the average weight of the left side of the cerebrum is about ½ oz. greater than that of the right side, but Dr. Thurnam mentions that Wagner has denied the preponderance of the left cerebrum. The subject of these notes was right-handed.

† "Journal of Mental Science," January, 1866, p. 493.

‡ In a healthy brain examined by Dr. Crichton Browne it seems that when the grey matter in corresponding situations in the two hemispheres varied in this respect the higher specific gravity was more frequent in the right than in the left one in the proportion of eight to five. Vide "Lancet," Aug. 22, 1874, p. 269.

respectively, as  $1040\frac{1}{2}$ , 1039, and  $1042\frac{2}{5}$ . On examining the detailed records by Dr. Bucknill\* the average specific gravity both of the grey and of the white† matter of the brain in his cases of epilepsy and of general paralysis is seen to be above the average specific gravity found by him in the insane generally; and that of the atrophied layer of cortical material in his illustrations of general paralysis more nearly approached the specific gravity of the corresponding medullary regions than is usual in epileptic insanity, or insanity generally.

3.—*The lesions which caused the convulsions.* The presence of the encephalic lesions of general paralysis, the time at which the convulsions made their appearance, namely, just before mental disorder was established; the diffused softening in a comparatively recent case, and the absence of that fibroid induration which is so frequently found in chronic cases of ordinary epilepsy‡ are sufficient to separate the fits in this case from the category of epilepsy proper, and to relegate them to the domain of epileptiform convulsions, such as are often due to some accidental or secondary change. Some slight degree of congestive (false) hypertrophy probably occurred, in the case we are considering, under the combined influence of long-continued cerebral hyperæmia, and of the congestions and vascular distensions engendered by the convulsive attacks, while softening was gradually taking place from the advance of disease on another line, and the tendency was towards atrophy in the more advanced stages, as seen on the left side. None of the induration of old epilepsy was present, nor were the post-mortem appearances in any respect those of “true” cerebral hypertrophy or general sclerosis of the neuroglia.

The lesion which gave rise to the unilateral convulsions was, I take it, that meningo-encephalic morbid change which was much more marked on the left side, was most particularly developed there in the regions of the middle and anterior cerebral arteries, and was a source of “irritation,” “over stimulation,” or “discharge,” of some of the convolutions there situated. So marked a difference between the two sides of the cerebrum, in the thickening and opacity of

\* “Psychol. Med.,” 3rd Ed., p. 588 et seq.

† This seems contradictory to his own statement on page 602, that the specific gravity of the medullary matter is always diminished in general paralysis.

‡ “Psychol. Med.,” 3rd Ed., pp. 581, 582, 625. (The last by Dr. J. Batty Tuke.)

the membranes and in the degree of their adhesion to the cortex, is very rare in general paralysis. Bayle accounted for the epileptiform attacks in general paralysis as arising from "inflammation of the cortical substance, softening of it, and adhesion to the pia mater;" but Westphal\* insists "that most violent attacks of convulsions constantly occur (in general paralysis) without any such involvement of the cortical substance—that is, without softening of it and adhesion to the pia mater; and again, this change in the cortex is frequently found where no such attacks have existed." It is to be noted, also, that extensive adhesion of the pia mater and decortication of the grey matter, of the characters present in the above case, though common enough in ordinary general paresis, are extremely rare in ordinary chronic epilepsy. In looking over the recorded necropsies of a considerable number of epileptics (proper) I can only find two or three which presented the compound pathological lesion in question, and in them the change was only slight. But we are now dealing with a totally different group of convulsions, and, reasoning from analogy, it seems that this particular morbid alteration may reasonably be deemed a probable cause of the epileptiform seizures in some, at least, of the cases, where they supervene in the course of general paralysis.

Dr. Ferriert† has recently discussed two instances of epileptic insanity in which the convulsions began unilaterally, and the post-mortem examination revealed softening, wasting, and depression of certain areas of the grey cortex, and, in one instance, adhesion of the pia mater limited to the belt of depression. To account for "convulsions he states that in both these cases it is assumed that the existing lesion gave rise to some degree of irritation of the brain while gradually progressing to destructive action." In short, it is difficult to see why an extreme meningeal alteration of the nature above described should not produce epileptiform convulsions by its direct effect; or, again, by its influence on the vasomotor system, similarly as many a source of peripheric irritation may cause convulsion—a doctrine enforced by Brown-Sequard in particular.‡ What more likely to induce convulsions proceeding from the cortex than the constant irri-

\* Translated by Rutherford, "Journ. Mental Science."

† West R. Rept., Vol. iv., p. 51.

‡ "The Physiology and Pathology of the Central Nervous System," Am. Ed., p. 179, et seq.

tation of thickened, hypervascular, adherent membranes disturbing the balance of the cerebral circulation, causing nutrition imperfect in quality and abnormal in rhythm, and making discord, generally, of the harmony existing in health between brain circulation and brain nutrition?

The patient died in the status epilepticus, and so far as the mere condition of the vessels with respect to repletion was concerned, the turgid venosity which was present simply resembled that detailed by Dr. Crichton Browne\* as usual to death in the "status:"—the sinuses and vessels engorged, the tissues injected, the punctæ numerous, the vessels covering the pons and medulla oblongata dilated and distended with blood, &c.

4.—*Localisation.* Assuming that the above hypothesis as to the source of the epileptic seizures is correct, it does not appear that the motor phenomena in this case have direct bearing upon the mooted question of the localisation of function in the brain. The convulsions, indeed, were unilateral, and of the side opposite to the most obvious lesion, but beyond this it would scarcely be safe to venture an opinion. The parts leading in the convulsive motor phenomena were—Firstly, the right angle of the mouth and the right side of the face and the eyes; and, secondly, the right arm. In *kind* the spasm was mainly clonic. The *range* of the spasm or convulsion included the right side of the mouth, and the face, eyes, head, neck, arm, hand, and lower extremity, all on the right side; and the bilateral ocular, thoracic, and abdominal muscles were slightly implicated, though not always on both sides. That is to say, it barely reached the second degree† of convulsion beginning unilaterally, in which the fit passes from the unilateral muscles of the side where it begins to the bilateral muscles of both sides. The *order*‡ in which the parts were involved in a fully developed seizure was as follows:—Right side of mouth drawn up in spasm, face and nostril convulsively jerked towards the right side, head and eyes turned to the right; then quickly, and almost simultaneously, the right hand and arm, and the orbicularis-palpebrarum, and the occipito-frontalis came into action; the right

\* "Journal of Mental Science," April, 1873, p. 33.

† "St. Andrew's Rep.," Vol. iv., p. 166.

‡ The order of these phenomena was somewhat similar to that in a case by Dr. Hughlings Jackson, where the doubtful inference was drawn that the symptoms depended upon pressure on the healthy left corpus striatum.—Vide "Med. Times and Gaz.," Aug. 15, 1868.

leg, the chest, and abdomen were affected later, and not at all in the slighter seizures. In the most severe attacks moderate spasm remained at the right side of the mouth, the eyes, and the right fingers after the other parts had become quiescent, and finally died away last at the mouth.

Judging by the analogy of Ferrier's experiments, the centres leading in the excitation of convulsions in the case we have described should be:—

For mouth and tongue.—Left ascending frontal g. and posterior portion of third frontal g. (near their conjunction).

For Face.—Left ascending frontal g. near the posterior portion of second frontal g.

For arm.—Upper division of left ascending frontal g. and ascending parietal (and first frontal?).

For side movements of head and eyes and dilation of pupils.  
—Parts of first and second frontal.

The topography of the extreme degree of lesion scarcely corresponded to this. The parts of the left hemisphere in which there was found at the autopsy the most marked degree of thickening, toughness, and adhesion of the membranes, and decortication of the grey matter, were (enumerated from before backwards) as follows:—Posterior half of first frontal g., greater portion of second frontal; posterior parts of g. supra-marginalis and of second and third temporo-sphenoidal; second external annectant. To a less extent on the inner surface; orbital surface; third and ascending frontal gyri. Add to this a universal slight softening, more advanced on the left side, and slight wasting of some of its gyri. Though the adhesion and other changes just described were less marked over the left third frontal convolution than over some other parts, yet it must be noted that this gyrus was amongst the parts most softened—that it stained less with carmine than the other parts examined, and under the microscope presented pathological changes, as well, or more, marked than were observed in the sections from several other regions. The morbid lesions obvious to the naked eye were, however, spread over a considerable area, and although degeneration had proceeded as far in the third frontal as in any other gyrus, there is no proof that the focus of irritation was mainly seated in it.

Dr. Hughlings Jackson has asserted\* that when convul-

\* "St. Andrew's Rep.," Vol. iv., p. 166. "Lancet," Feb. 1, 1873.

sions begin unilaterally there are three parts where the fits principally commence : most frequently (1) in the hand ; next (2) in the face, or tongue, or both ; and lastly (3) in the foot. He states that in the simple cases of convulsion " there is well exemplified an important principle which, I presume, applies to all symptoms of the *cerebral* series. . . . The principle is that those parts are wont to suffer first and most which serve in the more voluntary (special) operations, and those last and least which serve in the more automatic (general) operations. . . . The spasm 'prefers,' so to speak, to begin in those parts which have the more voluntary uses."\* Dr. Ferrier describes the convulsions artificially produced by electricity in the lower animals as first invading "the muscles most in voluntary use,"† and also states that "when the irritation starts primarily from any one particular centre, it is the first to be thrown into action, and then the others are discharged, usually in a certain order. The order most commonly observed is that the centres seem discharged from before backwards." And again, "a general irritation of the whole hemisphere manifests itself primarily in the most excitable parts, and these coincide with the most voluntary centres."‡

In the case of G. H— the unilateral fits began at the mouth and face, and quickly involved the arm ; and it would seem as if this was due merely to a picking out of parts high (highest) in the voluntary series ; as if a widely-diffused irritation, or some morbid influence from a wide area, concentrated itself upon the parts where the actions represented were of the most varied, separate, and highly educated character ; as if this morbid influence merely converged to the particular channels into which the normal impulses of the widespread convolitional cineritious area had been most wont to flow in health. I would, therefore, explain the local character of the motor phenomena in this case, not as being due to any (hypothetical) lesion or cause of a strictly circumscribed nature, but upon the same grounds as one would explain the above-mentioned results obtained by Ferrier and others from prolonged *diffused* irritation of the cerebral cortex in the lower animals ; in fact, the analysis of a number of instances of epileptic or epileptiform convulsions beginning unilaterally would incline one to the belief that such attacks may begin

\* "West R. Rep.," Vol. iii., p. 316, et seq.

† "British Medical Journal," April 26, 1873, and "Op. Cit."

‡ "Op. Cit.," Vol. iv., p. 50 ; and Vol. iii., p. 88.

(say) in the hand, and be strictly confined to a limited range, and yet the lesion apparently causing them be found at the autopsy to involve very different localities in different cases. It is true that we are told not to state that there is convulsion of a certain group of muscles, but that there is "the sudden development of certain co-ordinations of these muscles,"\* and this is a line of inquiry which, while more difficult, promises more exactitude of result—the line of inquiry as to the localities for the leading representation of the most special movements in which each part engages.† But in the case of G. H.— this physiological localisation could not be effected; many centres being implicated, one could not learn the particular order in which the movements evolved were represented in specific portions of the nervous tissue.‡

A minor point is, that in some, at least, of the fits when the pupils widened the right one was the more dilated, and several times it was noticed that the right side of the occipito-frontalis was mainly in action; and that, of the chest and abdomen, the muscles of the right side were those mainly or solely convulsed. Dr. Russell has recorded a case of "hemiplegic epilepsy" in which, with right unilateral convulsions, the only muscles of the trunk implicated were the right rectus abdominis, and right pectorales.§

Now Dr. Jackson describes the spasm in this group of cases as affecting primarily the unilateral muscles of the side in which it begins, and in the next degree as passing on thence to involve also the bilateral muscles of *both* sides.|| The case I have described is rather opposed to this view, so far as it goes. Indeed, in a later paper,¶ he writes with some doubt on this point in referring to cases of unilateral convulsions originating in like manner as occurred in G. H.'s case—convulsions depending on "discharge" of convolutions in the region of the middle cerebral artery, and near to the motor tract.\*\*

5.—*Hemiplegia*.—In range the paralysis was dextral hemiplegic. The distribution of the varying degrees of palsy in the different parts was similar to that of hemiplegia

\* Dr. H. Jackson, "Med. Times and Gaz.," Dec. 23, 1871.

† "Med. Times and Gaz.," Aug. 15, 1868, p. 178.

‡ "Lancet," Feb. 1, 1873, p. 164.

§ "British Med. Journal," June 22, 1867, p. 732, et seq.

|| "St. Andrew's Rep.," Vol. iv., p. 166.

¶ "West R. Rep.," Vol. iii., p. 337.

\*\* "Lancet," Feb. 1873, p. 163, and "West Rid. Reps.," Vol. iii., p. 336.

of the ordinary kind. The facial and lingual muscles were, however, considerably involved. The order of recovery from the hemiplegia was that the leg regained power rapidly, the arm slowly, the face more quickly than the arm, but the incomplete right facial palsy was replaced, during the course of recovery, by a state of slight continuous spasm, which excludes the face from further consideration in this particular relation. A fortnight elapsed before the hemiplegia had quite disappeared.

Of what character, then, was this temporary paralysis? Its history was that of epileptic hemiplegia—it was found for the first time after a succession of severe fits affecting the same side; there was slight amelioration whenever any remission occurred in their severity and frequency, and improvement set in steadily when these convulsive attacks ceased. Though the face was more involved than is usual in hemiplegia due to a cause whose locus is the cerebral cortex, yet the general distribution and history of the palsy, in this case, seemed to point to exhaustion of an area of the cortical cineritious neurine, following upon that excessive excitation which produced the convulsive phenomena. Thus, as Dr. Todd says, the undue exaltation of polar force which causes the fits, “induces subsequently a state of depression or exhaustion . . . which will be most upon that side upon which there has been the greatest previous excitement.”\* In the case of G. H. the epileptic hemiplegia, although temporary, exceeded the more usual degree and duration. “The presumption is that the degree of palsy depends on the severity of the convulsion, *i.e.*, on the *quantity* of discharge. When the fit is severe, there may be hemiplegia complete in range, except perhaps for conjugated deviation of the head and eyes.”† In the above case conjugated deviation of the head and eyes occurred to some extent, and was further evidence that an extreme degree of epileptic hemiplegia had been reached. The posterior divisions of the (left) superior and middle frontal gyri were amongst the parts deeply implicated, and an abeyance of their function on the left side might be an explanation of this sign, based on Ferrier’s experiments.‡ As Dr. Bastian, however, has recently stated, “conjugated deviation” arises from lesions of various parts of the cerebrum. “Met with

\* “Clinical Lectures on Paralysis,” &c., 2nd Ed., pp. 299 and 300.

† Hughlings Jackson, “St. Andrew’s Rep.” Vol. iv., p. 169.

‡ Abstract in “Journal of Mental Science.”

occasionally with lesions in and upon the surface of either hemisphere, this sign occurs with greater proportional frequency as the lesion approaches the cerebral peduncle.”\* Dr. Bastian† regards the temporary hemiplegias in cases of the epileptic group as due to spasm of the cerebral vessels, plus certain mere molecular changes of a recoverable kind in the nerve elements occurring in, or produced by, the fits. And this damage would be less easily recovered from where, as in G. H.’s case, there were wide-spread degenerative alterations in the minute vessels, and in the nerve elements themselves. Here was found no central lesion, and none of the basal ganglia, to which one might refer the paralysis.

A comparison of the temperatures observed on the two sides of the body would also incline one to the belief that the lesion which produced hemiplegia was of the cerebral cortex. During the period of recurring convulsions the temperature ranged between  $99.5^{\circ}$ , and  $101.7^{\circ}$ , but on the twelfth day, when the fits had ceased, the temperature was only  $97.1^{\circ}$ . On comparing the heat at the two axillæ on the first day the paralysed side was found to have a temperature  $.1^{\circ}$  lower than the other; by the sixth day its temperature was  $.6^{\circ}$  higher, and on the seventh and twelfth only  $.1^{\circ}$  higher. These notes accord with Bastian’s statement that in hemiplegia from lesion of the cerebral cortex the difference in temperature between the paralysed and the sound side seldom exceeds  $.1^{\circ}$  Fah., and tends to disappear soon.‡

Baillarger,§ indeed, explained the transient hemiplegias occurring in general paralysis after epileptiform or apoplectiform attacks on the theory of sudden congestions which mainly implicated one of the hemispheres. The persistent hemiplegias sometimes found were, he thought, due to atrophy of the brain on the opposite side, the result either of these repeated unilateral cerebral congestions occurring during the fits, or of a confirmed unilateral congestion of gradual origin. In the case of G. H. the hemisphere opposite to the side temporarily paralysed was undergoing atrophy; its weight was 64 grammes less than that of the other side, whereas Baillarger only speaks of an inequality of from 20 to 62 grammes;|| the cerebral hyperæmia and the

\* “Lancet,” June 20, 1874, p. 863.

† “Lancet,” April 25, and June 20, 1874, pp. 577 and 861.

‡ “Lancet,” Nov. 7, p. 1874, 650.

§ “Annales Médico-Psychologiques,” 1858, p. 168.

|| Baume cites cases of greater disequilibrium, “Ann. Med. Psych.,” 1862, p. 541.

pathological changes in the membranes were more developed on that side, and were associated with a greater degree of cortical degeneration. Had the hemiplegia been permanent in this case it would have seemed to corroborate (*quantum valeat*) the views of Baillarger;\* but as has been seen, the motor defect was comparatively transient, and, apparently, was due to a condition of the nervous tissue, the same as, or analogous to, that present in epileptic hemiplegia.

6.—*Speech*. The disorder or absence of speech may have been at first partly of the nature of epileptic aphasia, which is said to occur most frequently in those cases of unilateral convulsions in which the spasm begins at the right side of the mouth or tongue, or both.† When the speechlessness cleared away a variety of aphasia‡ still remained, and as this latter persisted throughout the rest of the patient's life, although for a considerable period he was free from fits, and without a trace of hemiplegia, there is every probability that it was due to those pathological changes in the cerebral cortex found over a wide area, not only in, but also on every side of, the left third frontal convolution.

## CLINICAL NOTES AND CASES.

*Lesion of Coordination in the Secondarily Automatic or Acquired Functions of Reading and Writing, with Hints of Hemiplegia. Question of Tabes Dorsalis, or Incipient Locomotor Ataxy: Clot in Right Optic Thalamus?* By GEORGE SHEARER, M.D. Liverpool.

R. T., æt. 42. Government Ship Surveyor, of active habits, and invariable good health, educated, intelligent, humorous, and possessing considerable mental activity. He is a heavy smoker and accustomed to his beer, but strictly temperate.

While in London, some five years since, he was one of a small band

\* Baillarger makes a clear distinction between the two varieties. He does not, as one of his critics seems to imply, attribute all the hemiplegias in General Paralysis with these modes of onset to unilateral cerebral atrophy. "L'atrophie prédominante trouve donc son explication dans ces congestions plus ou moins répétées sur l'un des hémisphères . . . . Les auteurs en effet ont admis deux sortes de congestions dans la paralysie générale, les unes lentes et permanentes, les autres brusques et instantanées . . . . Les congestions qui précèdent la paralysie générale ou qui surviennent dans son cours sont souvent accompagnées d'hémiplégies passagères . . . . En se répétant sur un seul hémisphère ces congestions finissent par amener des hémiplégies persistantes le plus souvent incomplètes."—Op. Cit., pp. 172 and 173.

† "Med. Times and Gazette," Dec. 23, 1871.

‡ "Bateman on Aphasia," p. 104, et seq.

of fast friends of the same social standing, but differing in political and religious creeds, who used to meet every Saturday evening at each other's houses, to discuss political and religious questions, in which he always took the liveliest interest. He was constituted "Dean of the Chapter," and when he left for Liverpool, engaged to keep up weekly communication with the club by letter, on subjects under discussion. This he did for a year and a half. At the end of this period, in the month of June, 1870, he complained one day of great weariness, and had to lean against a wall for support for a few seconds. Next day, in writing out his customary weekly argument for the debating club, he felt a most extraordinary sensation—afraid to go on writing—a feeling of distraction which obliged him to desist in spite of himself. He "knocked off" for half an hour, forgot the trouble, began again, but write he could not. He got up early the next morning to finish the composition, but when he had got about half-way down the first page, he came to a word (he believes it was the word "weather") which he could not finish, nor write another word any more than he could fly. It was a fine morning in June, and the sun was shining gloriously into the lobby of his house, so he got up, walked up and down for a while, and forgot the whole thing. At 8 a.m. he sat down again to write, but all in vain. With this attempt came on the most awful sense of some unknown terror, a sensation of something going—giving way in his brain, as if a handful of brains had been taken out of the back of his head, but without pain, or sense of weight, or heat, tension or pressure, and with perfect consciousness throughout.

He ran up stairs, tore about the house, but still this awful sense of something coming on, as if he were going to have a fit, continued for some time, notwithstanding that everything was done to calm and sooth and re-assure him. The same dreadful feeling returned whenever he continued writing beyond a very few minutes at a time, and he can only compare it to that of a man standing upon a trap door which he is conscious may give away any moment, or to that of a man ready to be hung standing under the drop. The feeling of helplessness (in writing) returned so frequently that he was obliged to give up his employment for a period of three months, yet circumstances obliged him to remain in town, though he believes that complete rest from business, together with the bracing influences of the country, would, at that time, have quite restored him. Even now he can write twice as long on the Mondays after the rest of Sunday.

In connexion with his official duties, he has frequently to sign his name, and at first he was so helpless in the matter of writing, that if the table were heaped with gold and silver and offered him for merely signing his name, he could not have done it. For a long time he was obliged to make his mark. After a time he found he could sign his name with his eyes shut, and in time he learned to write with one eye open, and at length, with both eyes open for a period never exceeding fifteen or twenty minutes at a time. The ability to write crept back

by little, but has to be exercised with the greatest care. When the power is going, and his ten minutes, or thereabouts, are up, he manages by the manœuvre of shutting his eyes to scratch away a little longer, and often signs his name in a spasm of anxiety with his eyes shut.

The case is very different from Scrivener's palsy. There is no spasm of the muscles of the fore arm or hand, and never has been, neither is there any peripheral pain or numbness, but only a sense of weakness and fatigue which extends to the whole of the left side threatening paralysis; this sluggishness in the leg being so great as to make him feel that if he don't keep moving (while the attack is on) he would lose the power of walking altogether. Yet, as before stated, there is no numbness or hyperæsthesia anywhere, and when the attack is over, his muscular power in the arms, legs, and trunk is unimpaired. It is a question of something acting on the brain through the eye, and he finds that reading (perhaps on account of the greater number of forms passing in an equal time through the eye and the brain in reading than in writing) exhausts him more quickly, and sooner brings on the "horror" and helplessness. It is therefore as much a reading as a writing horror and helplessness, dysanagnosia and mogigraphia combined.

Patient has never sustained any injury to the head, nor suffered from "fits," nor headaches; there is no sign of cardiac or arterial disease, no arcus senilis, nor any mischief in the eyes beyond an old-standing half-sightedness in the left eye, with which, however, he sees further than with the right. At present he is the subject of extreme nervous jactitation of the lips and eyelids, which are almost incessant when he plays the passive rôle of a mere listener.

When a young man he had a peculiar affection of the left eye, which has deprived him of vision when objects are carried below the central plane or equator, that is to say, objects are only visible in the lower half or inferior segment of the eye, the upper half of the eye being blind. The eye was examined by an ophthalmoscopic surgeon who said the blindness was owing to an effusion of blood in the lower segments of the retina, and would probably disappear in the course of time by absorption. It has not, however, done so, and the focal lengths of the two eyes are now very different, that of the right being normal, say 10in., while that of the left or morbid one is  $1\frac{1}{2}$  feet. He can read ordinary newspaper type without his spectacles, with the right eye at three inches distance, and with the left at six. The presbyopic condition of the left eye may with tolerable certainty be attributed to some flattening of the eye ball, or derangement of the transparent media of vision consequent upon the ophthalmic affection in early manhood, and is probably in no way connected with the brain.

Besides the loss of writing function and the fugitive loss of power in the left side, during the attacks, he suffered at the commencement of the malady in 1870 from sudden attacks of choleraic

diarrhæa, which used to come on every morning before breakfast, gave him no warning, and used to pour from him in a perfect stream. All sorts of medicines and medical treatment were tried, but in vain, when at last he succeeded in stopping it by means of a bit of advice from a ship captain, viz.: the application of a couple of sponges dipped in cold water, one to the arms and another to the pit of the stomach, after every loose stool. His medical adviser dissuaded him from this as being likely to bring on an attack of inflammation of the bowels, and he used cold baths instead, since which he has been seldom troubled with diarrhæa.

Whatever the defect is, it is somewhere, says the patient, "*in the right side of my brain.*" Half-an-hour is the utmost limit he can continue reading or writing. He has never tried the electro-magnetic current, nor in fact any treatment worth mentioning, the doctors putting the case down as one of Scrivener's palsy.

Writing me from Cork, on April 1st, 1875, he apologises for the delay on the ground "that when his daily official letters were written *he had no writing power left*, it was completely gone. I could no more have written a letter than a child who had never learnt to write. I have taken from the 1st to the 11th to write this letter."

In answer to my question "whether the disability is ever accompanied by cramps or spasm," he replies, "No, never; nor by numbness or pain in the arm or hand, or anywhere else. When I have written about 20 minutes, as a rule, I find myself growing excited, as if what I was writing was of the utmost imaginable consequence, and had to be posted within two minutes from that time, or if not some sad catastrophe must follow. This excitement developes into an intense anxiety to write very rapidly, and if I persevere in writing, as I am sometimes compelled to do to save a post, I find the strength leaving my left arm, as gradually and sensibly as a carpenter feels the strength of his right arm giving way after he has been sawing wood for half an hour—this character and degree (of what shall I call it?) weakness or helplessness being in each case *identical*, but *accompanied with no pain*. If I persist in writing after this, it is with feelings I can only characterise as *distress*. I cannot explain it, but the helplessness of the left arm *extends to the leg*, and is very often attended with a *violent action of the bowels*, as if I had taken some drastic purgative.

"At this point (in writing the present letter) I am utterly prostrate, the countenance exhibits a scared and frightened appearance and a sense of inability to move comes over me, symptoms a familiarity with which has taught me to be no longer terrified at, but to meet by a glass of some stimulant, as brandy and water, and a rush into the open air. After an extreme attack like this, the sight of pen and ink is almost unbearable for eight or ten hours.

"When I have to complete a letter at all costs, for any particular reason, I find myself greatly assisted by two expedients:—When I find my writing power failing me I continue a little longer by shutting

one eye and writing with the other—it doesn't matter which eye—and when this fails me I can go on if I write thus, *largely and slowly* for at least a minute or a minute and a half.

“I may add that not only have I never experienced any pain of any sort, but with all the helplessness of my left arm, it has *never felt dead or benumbed* as in paralysis ; simply tired and weary, as if from long continued normal exertion.

“I was first seized on the 18th of June, 1870, and for the first two months could not even sign my own name. I have, as you see, much improved since then, although this letter has taken me ten days to write.”

June, 1875. His wife informs me that he now writes all his letters to her *with his eyes shut* ; a circumstance explicable enough on the ground that there is less distraction to the jaded nervous system in writing with the eyes closed, but which also seems to show that his improvement is by no means of a very substantial or encouraging nature. July 1st. Returned from Ireland well and hearty. The writing and reading power is in no way improved. He writes best and largest with his eyes shut, or when directed and fixed on some distant object in the room.

*Diagnosis.* The case is plainly one of incipient ataxy, not of the locomotor apparatus proper, but of the parts concerned in the performance of certain complex acquired functions ; a failure, in short, of coordinative power over the nerves and muscles employed in the acquired habitudes or secondarily-automatic functions of reading and writing. The mental horror following each exhibition of the ataxy I regard as a mental impression secondary to, and consequent upon, the presentation to the consciousness of the fact of utter inability to perform a heretofore easy and wonted function ; the will, in fact, is unable to exert its customary combining and coordinating power over certain groups of muscles, and the discovery gives rise to the mental agony.

Whether the seat of the lesion be in the cerebellum, the centre of coordination, or in the spinal cord, which by means of its nervous strands places the eye and the brain in relation with the muscles, or finally in the optic thalamus of the right side, where the existence of a small clot would explain the crossed pseudo-paralysis of the left side, and the manner in which the writing-palsy supervenes through the previously wearied eye sight—this symptom, so far, hardly warrants us in deciding dogmatically, though the last seems, by much, the more probable hypothesis.

The violent catharsis which, without warning and without control, was wont to attend the crisis of so many of the nervous

attacks, may be set down as of purely sympathetic origin. It is the motor force constantly emanating from the spinal cord which maintains the balanced action of the voluntary muscles, as well as the vital tonicity of the involuntary muscular system (of the intestines and throughout the body); and the circumstance is by no means an uncommon one, for a sudden brain shock, or even strong mental impression, to act instantaneously on the entire viscera, through the agency of the sympathetic nervous system, so as to give rise to the most urgent looseness or even attacks of choleraic diarrhæa.

*The treatment* hitherto has been *nil*. I have enjoined perfect rest of brain, so far as practicable, by recommending the employment of a reader and amanuensis; general quietude and daily open-air exercise; absorbents alternately with nervine tonics, and faradization of the spinal cord and muscles, but I confess that I regard the mischief as beyond the reach of art, and shall be glad if we can prevent matters growing worse.

The manner in which the diarrhæa was cured appears to be quite physiological, for, according to the latest experiments, cold at once stops the peristaltic action of the bowels while heat sets them agoing.

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*A Case of Epilepsy of 33 Years' Duration—Recovery.* By  
EDMUND BANCKS WHITCOMBE, M.R.C.S.E., Assistant Medical  
Officer of the Borough Lunatic Asylum, Birmingham.

H. L. B., a female, aged 30 years, unmarried, and following no occupation, was admitted into the Birmingham Borough Lunatic Asylum on the 2nd of February, 1860. She had been insane two weeks, the supposed cause being epilepsy. The medical facts (certified by W. M. Richards) were "Total imbecility, unconsciousness of everything and every person about her."

On admission she is stated to be of short stature, thin, of neuro-sanguine temperament; exhibits very little intelligence, does not know her own age, saying 21.

During the first year she had from 10 to 20 fits a month; these chiefly occurred at night, and some were of a very slight character. They produced the usual amount of bewilderment, but otherwise she gave little or no trouble.

In 1861 she suffered from amenorrhæa, and at frequent intervals, for the following eight years, she had irregular menstrual discharges, at times amounting to menorrhagia. During this period there was a large increase in the number of fits, she became anæmic, was very feeble

mentally, and her memory deficient. When I first saw her, in August, 1870, she was thin, very pale, complained occasionally of frontal headache, and of palpitation of the heart; her pulse was small and quick, her tongue tremulous and indented, and she suffered from leucorrhæa. There was no trace of structural disease. Mentally she was depressed, would cry frequently without cause, and appeared frightened at trivial matters. She had no recollection of past events; fits were frequent, and severe in character. I gave her full doses of the tincture of perchloride of iron, and a liberal diet, under which she improved. In May, 1872, she suffered from an attack of acute rheumatism, which gradually subsided, but left her in a state of chronic rheumatic arthritis, the knees and wrists being implicated. During the acute disease she had two slight epileptic seizures. The rheumatic affections were treated in the ordinary manner, and she took 30 minim doses of tincture of perchloride of iron three times a day, and 10 grains of Dover's powder occasionally, to relieve pain.

During the following year, 1873, she suffered much, especially from the left knee, which, in the early part of 1874, swelled considerably, became hot, red, and exceedingly painful. Suppuration and partial luxation of the joint quickly followed, and on the 26th March, after consultation with Mr. Alfred Baker and Mr. Green, I removed the limb just above the knee. The joint was found to be in a state of gelatinous degeneration. The operation was borne well, and from this time she progressed rapidly, and in less than a month was able to sit up, the stump had healed, and her general condition much improved; but I noticed, for the first time, that she had angular curvature of the spine. At the present time (November, 1875) she is in good bodily condition, and free from pain. The spinal curvature has considerably increased, and she has chronic rheumatic arthritis of both wrists. Occasionally she suffers from palpitation, but there is no abnormal condition of the heart. She is constantly employed at needlework, is bright, cheerful, and happy, rational in conversation, and her memory has improved. There is still a little childishness in her manners, and a dread of being sent away from the asylum. The catamenia ceased nearly two years ago. She has not had a fit, nor can she refer to even the sensation of one, since June 4th, 1872. I have gathered the following history from a sister-in-law:—H. L. B. was always a weak, delicate child, had little education, but was never considered dull. Has been subject to epileptic seizures since she was nine years old. At first they appeared to be faintings, with shiverings, but gradually became more severe, and of frequent occurrence. At 23 years of age she became insane, was sent to a private asylum, where she remained about two years, and returned home much improved.

Her father and one brother died of apoplexy, mother of consumption; two brothers are living in good health.

Her family were temperate in their habits, and neither epilepsy nor insanity can be traced on either side.

## NUMBER OF FITS RECORDED EACH MONTH SINCE ADMISSION:—

	1860	1861	1862	1863	1864	1865	1866	1867	1868	1869	1870	1871	1872
January.....	—	—	49	35	—	21	—	—	—	—	—	4	0
February ....	11	14	34	41	23	16	8	14	11	8	1	3	1
March.....	13	27	52	44	28	22	17	7	17	13	2	15	0
April .....	8	20	41	23	25	21	21	14	12	10	1	32	0
May .....	10	34	43	36	30	20	8	16	20	9	10	2	3
June .....	12	61	49	31	15	16	22	10	8	8	8	1	2
July .....	17	52	57	—	34	17	—	16	—	—	23	2	0
August .....	14	57	34	43	34	29	19	8	12	—	15	6	0
September...	11	45	38	38	18	—	9	—	7	6	22	2	0
October .....	21	57	35	29	—	11	18	—	14	2	11	0	0
November ...	28	56	40	17	10	10	15	—	6	0	1	0	0
December....	16	49	35	29	24	10	21	—	5	8	10	0	0
	161	472	502	366	241	193	158	85	112	64	104	67	6

In blank spaces no record has been kept.

The highest number of fits in any 24 hours was eleven.

A succession of fits occurred on the night of the 31st of March, 1871, which are not included in the above table.

*Remarks.*—The most interesting feature in this case is the complete cessation of epileptic fits after an uninterrupted suffering for thirty-three years; and, with that, the return of mental power. Medicines cannot be accredited with this satisfactory result, nor can I point to an improved bodily condition of the patient for it. The case presents itself simply as one of metastasis—the epilepsy succumbed to rheumatism—and it is one of those forms of metastasis, alluded to by Dr. Sieveking, in his work on Epilepsy, page 219, in which a “genuine blood disease” is not unfrequently followed “by a permanent cure of the epilepsy.”

Throughout the case presents points worthy of notice; and to these I shall briefly refer. The combined paternal and maternal conditions appear to have produced some hereditary influence on the origin of the epilepsy, as there is a total want, in the history, of any immediate cause. That apoplexy may do so, is shewn by M. Herpin, in his table of the state of health in relatives of epileptics (*Du Prognostic et du Traitement Curatif de l'Epilepsie* par Th. Herpin, page 327. Paris, 1852); and the child of a phthisical mother would, perhaps, be the

least likely to withstand such influence, however slight it may be.

In the table I have compiled, exhibiting the number of fits this patient had after admission into the asylum, the varying number of attacks, both monthly and yearly, is strikingly noticeable, and is, doubtless, due to the bodily health of the patient at the time—more especially to uterine irregularities and the consequent anæmia.

Everyone associated with female epileptics has noticed an increase or decrease in the number of fits during the menstrual period; the former particularly when there is a temporary cessation, or an abnormal quantity or quality of the discharge. And this effect of functional changes leads me to the conviction that epilepsy is regarded by the profession generally within too narrow limits, when viewed as a purely organic disease, especially as there is an entire absence of any uniform pathological change.

Again: the fact is worthy of note that angular curvature of the spine appeared, or, at least, greatly increased, while the patient was in the recumbent posture, and simultaneously with the rheumatic affection. It may be doubted whether the removal of the limb for rheumatic disease of the joint was justifiable when the same affection was present in two other joints. Any attempt at resection, or even to produce ankylosis, would have been attended with too great a drain upon the system, and undoubtedly have terminated fatally. Besides which, on the principle that every case should be treated on its own merits, I submit that the result here proved the correctness of the proceeding.

The return of reason and mental vigour, with the cessation of fits, is not only satisfactory, but most interesting to the psychologist; and tends to prove conclusively that no irreparable lesion of the great nervous centres can have been produced, even after so long a period as fifteen years.

In concluding these remarks, I would express a wish that all cases in which there is a lengthened or permanent cessation of fits in epilepsy should be placed more prominently before the profession.

The good, if not curative effects, of some drugs, especially the bromide of potassium, are now generally acknowledged; and these augur well, to my mind, the probability that epilepsy will ere long be looked upon as a curable disease. But treatment should not be delayed; the disease should be combated in its

infancy, as it were. Convulsions in childhood, from whatever cause, should be viewed with suspicion, and all efforts be made with perseverance.

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*A Case of Epilepsy, with Post-Mortem Examination.* By Dr. THOS. HOWDEN, Haddington.

P. D., age 30. Epileptic. Admitted February, 1875; having been in confinement in this asylum five years before. For these five years, at least, he has taken the bromide of potassium pretty regularly; and during his five years' absence he has worked as a day labourer. On his last admission he was just recovering from a severe attack. Though having fits occasionally, they were never very severe till August 26th last—when, between that date and the 31st of August, he had at least twenty-six. He was able to be out of bed till the afternoon of the 29th; after which he became dull and stupid—never speaking, unless when spoken to, and scarcely then. Took the food given him readily. From the 29th August to his death, on September 2nd, he perspired profusely. His pulse was small, and very rapid; conjunctivæ much injected; pupils moderately contracted.

On September 1st, though he had no fits, there were frequent nervous twitchings of the muscles of the face, most marked on the right side, and of the right arm. Died 10 p.m. of September 2nd.

*Post-mortem* examination twenty-four hours after dead. Body well nourished.

*Head.*—Calvarium dense and hard. Dura mater very firmly adherent to bone, more especially in the occipital region. Superficial vessels and sinuses much congested. Weight of brain  $53\frac{1}{2}$  oz. There was no serous effusion on surface of brain. The cerebrum was moderately firm, but the cerebellum very soft.

On opening the right lateral ventricle there was an escape of fluid so sudden that much of it was lost. The ventricle was much enlarged, and its surface very white and glistening. The quantity of fluid gathered and measured from the right ventricle was  $\frac{3}{4}$  i.,  $\frac{3}{4}$  vii., and I should think that at least an ounce must have escaped before; so that altogether there would be about three ounces of fluid in the ventricle. The left ventricle was equally large with the right, but only contained two drachms of fluid. On further examination, however, this was not to be wondered at, as there was a longitudinal rent along the under surface of the septum lucidum about one inch in length.

He was never in a state of real coma. He answered when spoken to a few hours before death; and though his breathing was laboured from acutely-congested lungs, it was never stertorous.

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## OCCASIONAL NOTES OF THE QUARTER.

*Dr. Howe on Laura Bridgman.*

In the forty-third Annual Report of the Massachusetts Asylum for the Blind, Dr. Howe gives an interesting description of the method which he employed for the instruction of Laura Bridgman, who was totally blind and deaf, and who had only a very indistinct sense of smell. We quote Dr. Howe's description entire:—

I found in a little village in the mountains a pretty and lively girl, about six years old, who was totally blind and deaf, and who had only a very indistinct sense of smell; so indistinct that, unlike other deaf-mutes, who are continually smelling at things, she did not smell even at her food. This sense afterwards developed itself a little, but was never much used or relied upon by her. She lost her senses by scarlet fever so early that she has no recollection of any exercise of them. Her father was a substantial farmer; and his wife a very intelligent woman. My proposal to try to give regular instruction to the child seemed to be a very wild one. But the mother, a woman of considerable natural ability, animated by warm love for her daughter, eagerly assented to my proposal, and in a few days little Laura was brought to my house in Boston, and placed under regular instruction by lessons improvised for the occasion.

I shall not here anticipate what I intend to write about her, further than to say that I required her by signs, which she soon came to understand, to devote several hours a day to learning to use her hands, and to acquiring command of her muscles and limbs. But my principal aim and hope was to enable her to recognise the twenty-six signs which represent the letters of the alphabet. She submitted to the process patiently, though without understanding its purpose.

I will here give a rough sketch of the means which I contrived for her mental development. I first selected short monosyllables, so that the sign which she was to learn might be as simple as possible. I placed before her, on the table, a pen and a pin, and then, making her take notice of the fingers of one of my hands, I placed them in the three positions used as signs of the manual alphabet of deaf-mutes, for the letters *p e n*, and made her feel them, over and over again, many times, so that they might be associated together in her mind. I did the same with the pin, and repeated it scores of times. She at last perceived that the signs were complex, and that the middle sign of the one, that is the *e*, differed from the middle sign of the other, that is *i*. This was the first step gained. This process was repeated over and over, hundreds of times, until, finally, the association was estab-

lished in her mind between the sign composed of three signs, and expressed by three positions of my fingers, and the article itself, so that when I held up the pen to her she would herself make the complex sign; and when I made the complex sign on my fingers she would triumphantly pick up the pen, and hold it up before me, as much as to say "This is what you want."

Then the same process was gone over with the pin, until the association in her mind was intimate and complete between the two articles and the complex positions of the fingers. She had thus learned two arbitrary signs, or the names of the two different things. She seemed conscious of having understood and done what I wanted, for she smiled, while I exclaimed, inwardly and triumphantly, "*εύρηκα! εύρηκα!*" I now felt that the first step had been taken successfully, and that this was the only really difficult one, because by continuing the same process by which she had become enabled to distinguish two articles, by two arbitrary signs, she would go on and learn to express in signs two thousand, and, finally, the forty and odd thousand signs or words in the English language.

Having learned that the sign for these two articles, *pin* and *pen*, was composed of three signs, she would perceive that in order to learn the names for other things she had got to learn other signs. I went on with monosyllables, as being the simplest, and she learned gradually one sign of a letter from another, until she knew all the arbitrary, tangible twenty-six letters of the alphabet, and how to arrange them to express various objects: knife, fork, spoon, thread, and the like. Afterwards she learned the names of the ten numerals or digits; of the punctuation and exclamation and interrogation points, some forty-six in all. With these she could express the name of everything, of every thought, of every feeling, and all the numberless shades thereof. She had thus got the "*open sesame*" to the whole treasury of the English language. She seemed aware of the importance of the process; and worked at it earnestly and incessantly, taking up various articles, and inquiring by gestures and looks what signs upon her fingers were to be put together in order to express their names. At times she was too radiant with delight to be able to conceal her emotions.

It sometimes occurred to me that she was like a person alone and helpless in a deep, dark, still pit, and that I was letting down a cord and dangling it about, in hopes she might find it; and that finally she would seize it by chance, and, clinging to it, be drawn up by it into the light of day, and into human society. And it did so happen; and thus she, instinctively and unconsciously, aided in her happy deliverance. After she had mastered the system of arbitrary signs, made by the various positions of the fingers used by deaf-mutes and called dactylology, the next process was to teach her to recognise the same signs in types, with the outlines of the letters embossed upon their ends. Thus with types, two embossed with *p*, two with *n*, one with *e*,

and another with *i*, she could, by setting them side by side in the quadrilateral holes in the blind man's slate, make the sign of *pen* or *pin*, as she wished; and so with other signs.

The next process was to teach her that when a certain kind of paper was pressed firmly upon the ends of these types, held close together and side by side, there would be a tangible sign on the reverse of the paper, as *pin* or *pen*, according to the position of the three types; that she could feel this paper, distinguish the letters, and so read; and that these signs could be varied and multiplied, and put together in order, and so make a book.

Then she was provided with types having the outlines of the letters made with projecting pin-points, which, when pressed upon stiffened paper, pierced through, and left a dotted outline of each letter upon the reverse side. This she soon ascertained could serve for writing down whatever she desired, and be read by herself; and also could be addressed to friends, and sent to them by mail.

She was also taught to write letters and words with a lead pencil, by the aid of the French writing-board, which is the most simple, most effective, and cheapest method ever yet invented. This apparatus is made out of a piece of stiff pasteboard of the size of a common sheet of letter-paper, and has grooved lines or channels, about the eighth of an inch deep, running, an inch apart, transversely across the pasteboard plate. This pasteboard is inserted between the two pages of a common sheet of letter-paper, and the first leaf is pressed with the forefinger into the grooves. This leaves depressions or channels, the upper and lower edge of which can be felt by the pencil-point, and this, a little pressed, leaves it marked with an *o*, or an *l*, or a *t*. The sides of the grooves also give to the paper which is pressed between them rounded edges, so that the pencil can slide upwards and downwards over and under them, and also be guided from left to right.\*

It would occupy more space than can be spared here to explain how, after she had learned the names of substantive nouns, or names of things in the concrete, she came to understand words expressive of the various material or moral qualities thereof. The process was slow and difficult, but I was so aided by her native shrewdness and her love for learning new things that success followed. For instance, she knew that some girls and women of her acquaintance were very sweet and amiable in their tempers, because they treated her so kindly, and caressed her so constantly. She knew, also, that others were quite different in their deportment; that they avoided or repelled her, and were abrupt in their motions and gestures while in contact with her; and might be called, therefore, sour in their tempers. By a little skill she was made to associate in her mind the first person with a

\* I commend this simple apparatus, not only to blind persons, but to those who are incapacitated from using their sight in writing. With a very little practice one can write with it easily and legibly. It is so small and light that it can be carried in a portfolio. It may be had at our store, 20, Bromfield Street, at cost price—from fifteen to twenty-five cents, according to quality.

sweet apple, the other with a sour apple, and so there was a sign for a moral quality. This is a rough illustration; but it is hard to explain the process by which any children come to understand the names of things in the abstract, or moral qualities. Success came of faith, and patience, and reliance upon her having the native desire and capacity for acquiring a complete arbitrary language, which desire had now become quickened to a passion for learning new signs. Moreover, I was greatly aided from the start by young lady teachers, who became in love with the work, and devoted themselves to it with saintly patience and perseverance. Then great assistance was given by the blind pupils, many of whom learned the manual alphabet and took every opportunity of using it and conversing with Laura. Thus early in the process the material and moral advantages of language began to show themselves. Without it the girls could only manifest their interest in Laura and their affection for her, as one does with a baby, by caresses, sugar-plums and other gifts, and by leading her up and down, and helping her in various ways. With it they began human intercourse through regular language.

And so she went on, diligently and happily, for a score or more of years, until at last she acquired a large vocabulary of words, and could converse readily and rapidly with all deaf-mutes, and all persons who could use these signs. She could read printed books readily and easily, finding out for herself, for instance, any chapter and verse of Scripture. She could also read letters from her friends in pricked type, or by the Braille system of points. She could also write down her own thoughts and experiences in a diary; and could keep up a correspondence with her family and friends by sending to them letters in pencil, and receiving their answers either in pricked letters, which she could read by the touch, or letters written with ink or pencil, which could be read to her by some confidential seeing person.

Thus was she happily brought at last into easy and free relations with her fellow creatures; and made one of the human family.

I take this opportunity to say that Laura is now forty-four years old. Her father has recently died; and the little property which he thoughtfully left for his widow, and this, the most dearly beloved of his children, has been very selfishly, ungenerously, and, as I think, unlawfully misappropriated by some relatives; so that Laura and her aged mother must bear such unkind treatment in the old homestead, that they continue to live in it only through the lack of means of living elsewhere.

Laura has for many years contrived to earn a little money by making bead baskets and other trinkets; and she has the interest of two thousand dollars bequeathed to her by her excellent friends, Mrs. Abby, and her daughter, Abby M. Loring. She has also a home during the cold season at the Institution; but still she barely receives enough for necessary articles of dress, whereas she has a feminine delight in personal ornamentation: she loves to have showy and

fashionable dresses, bonnets, and the like, and trinkets for her dressing table; and it would give me great pleasure to gratify her innocent taste to a reasonable, and even to a little unreasonable, degree.

Any persons disposed to make any addition to the Loring Fund, can do so by remitting to me, or to the Treasurer of the Institution, with explanations of their wishes.

During many years Laura passed most of her time in exercises such as those above described; new ones being devised as she proceeded. She spent as many hours daily in her studies and mental work as was consistent with her health; but all the rest of the time was given to gymnastics, or learning to handle domestic implements, as the broom, the dish-cloth and the needle; to sew, to knit, to braid, to occupy herself in simple house-work, sweeping floors, dusting furniture, making beds; finally, to more difficult kinds of work, as crochet-work and the like.

In all these things she succeeded so well, that she is now capable of earning a livelihood as assistant to any kind and intelligent house-keeper who would accommodate her work to Laura's ways.

The method of instruction was, of course, novel, and the process long and tedious, extending over several years, until she came to be able to read and understand books in raised letters; to mark down variously shaped signs upon a grooved paper, and so write letters legible by the eye; to attain a pretty wide command of the words of the English language, to spell them out rapidly and correctly, and so express her thoughts in visible signs and in good English. To make all this fully understood by specimens of her style as she used the language of childhood, will require a good-sized volume; and I confine myself now merely to saying that in the course of twenty years she was enabled to do it all. She has attained such facility for talking in the manual alphabet, that I regret that I did not try also to teach her to speak by the vocal organs, or regular speech. The few words which she has learned to pronounce audibly prove that she could have learned more.

I propose to give later a minute account of the instruction of this dear child, and the condition into which it has brought her: but I must limit myself here to an expression of the thought and principle which gave me courage to begin, and perseverance to finish the work.

The report, which is long and elaborate, contains several other interesting observations. Here is one. A blind child, during the vacation, contracted St. Vitus' dance. After a week or two another child manifested the disease, and soon afterwards another. It was necessary to send them home to prevent others being infected by the imitative tendency. Separation soon cured them. The children being blind, it was not through sight that they were infected; but a knowledge of the strange symptoms was gained by close contact

of the pupils while at their school-desk, in seats, in walks, in sports, &c. Dr. Howe's report will amply repay perusal, but we are glad to learn from it that he purposes writing a book devoted to a full account of the method which he devised to instruct Laura Bridgman, and a blind and deaf boy, Oliver Caswell.

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*Compensation for the lack of a Sense.*

In the same Report, Dr. Howe relates the following instance of the greater keenness to which the remaining senses may be brought when one sense is absent:—

Julia Brace, a deaf and blind mute, a pupil of the American Asylum, had a fine physical organization and highly nervous temperament. In her blindness and stillness her main occupation was the exercise of her remaining senses of smell, touch and taste, so that through them she might get knowledge of all that was going on around her. Smell, however, seems to be the sense on which she most relies. She smells at every thing which she can bring within range of the sense; and she has come to perceive odours utterly insensible to other persons. When she meets a person whom she has met before she instantly recognizes him by the smell of his hand, or of his glove. If it be a stranger she smells his hand, and the impression is so strong that she can recognize him long after by smelling his hand, or even his glove, if just taken off. She knows all her acquaintances by the smell of their hands. Surprising things are told of the nicety of her sense. She was employed in sorting the clothes of the pupils, after they came out of wash, and could distinguish those of each friend. If half a dozen strangers should throw, each one, his glove into a hat, and they were shaken up, Julia will take one glove, smell it, then smell the hand of each person, and unerringly assign each glove to its owner. It is even said that if, among the visitors, there is a brother and sister, Julia can pick out their gloves by a certain similarity of smell, but cannot distinguish the one from the other.

This would seem to indicate that not only has each person an individual odour peculiar to him, as he has a peculiar configuration of his nose or chin, but that there is, besides, a family odour, which is strong enough to be perceived, even when the individual odour is not.

He gives another instance illustrating the remarkable acuteness of the sense of hearing in a blind boy:—

Many years ago, an ingenious locksmith applied to me for the "loan" of a blind boy, as he said, who had quick ears and a silent mouth. On giving satisfactory answers, he got his "loan." He

wanted a boy to help him to open a new and complicated lock to a safe. An inventor had exhibited a locked safe and the key, saying that there was money within, which should be given to whoever could open the lock without deranging it. The peculiarity of the lock was that it had ten bolts which could not be seen from the outside. These ten bolts seemed, from all that could be ascertained, exactly alike; but, in reality, one of them was an inch longer than the others, so that when all were thrown forward, that one alone reached the projecting part of the safe, and held the door closed. The key, when inserted, would lift any of the ten bolts; but, in order to open the safe, it must be applied to the long bolt, and to that only, and that one must be lifted and turned back, in order to open the lock. But, if any other of the ten was lifted and turned back, ever so little, it deranged the combination, and the lock could only be opened by a peculiar instrument. The object, then, was to ascertain which of the ten was thrown forward, without turning back any other one.

The mechanic lifted each bolt carefully with the key, and let it fall, but without trying to throw it back; and he then tried to ascertain if in falling it made any peculiar noise; for he inferred that, as the only one which held the door was an inch longer than the others, it must fall with a slightly greater force. But the difference was too slight for his ear. He took the blind lad, and asked him to listen carefully to the sound which each bolt made as he lifted it and let it fall. After listening to each one intently, the lad said the sixth one struck a little the loudest. The mechanic lifted and let fall each one carefully several times, and each time the boy insisted that the sixth bolt sounded the loudest. Upon this, the mechanic lifted and turned back the sixth, and the lock was opened without the combination being deranged.

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### *A Degenerate Prince.*

The following description of the character of Charles Edward Stuart, the Pretender, is extracted from his "Life by A. C. Ewald," which has recently been published by Chapman and Hall:—

In spite of the romance that the name of Prince Charles will ever call up, in spite of the loyalty with which Scotland cherishes his memory, in spite of much that was excellent and commendable in his character, it is impossible to number the Prince among the Heroes of Biography whose lives bear inspection to the end. He lived too long for his reputation. Had he died when a lad at Albano, or had he perished on the moor at Culloden, History would have handed his name down to posterity as one of those brave, generous hearts, so

beloved by the gods that they are snatched away ere promise has had time to ripen into fulfilment. The picture of a mere boy gallantly fighting for what he deems his own, achieving success in the face of overwhelming odds, displaying on every occasion a tender humanity and a noble consideration, then enduring, with courage and dignity, the bitterest privations of adversity, is one not lightly to be despised. But, unhappily, there is a reverse side to the portrait. Instead of the youth so chivalrous in his deeds, so gallant in his bearing, so generous in his sympathies, we meet with a manhood debased by vice, a temper rendered querulous and suspicious by disease; no refinement, no delicacy, nothing but humanity's coarsest grain. In dwelling upon the events of the Prince's earlier life, and in recording those of his later days, one with difficulty imagines that both relate to the same man. It is like reading two distinct biographies, in which the virtues of the one are intended to bring out all the more in relief the baser points of the other. Between the bright, manly lad at Gaeta, the dignified Prince Regent in the old halls of Holyrood, the victor at Gladsmuir and at Falkirk, the hardy mountaineer of Skye, and the shattered creature that afterwards comes on the scene, with his bloated features and palsied energies, who quarrels with everyone, illtreats his mistress, illtreats his wife, and never appears in public without being miserably in his cups, what possible connection can there be? As well compare a Spartan chieftain with his helot! And yet each of the two descriptions belongs to the same Prince Charles, and a very few years have effected the awful contrast.

We saw that Charles, during the months he was being hunted down by the English in Scotland, began to accustom himself to drams of whiskey, the better to bear up against the privations and fatigue it fell to his lot to endure. The habit thus formed took such a firm hold of him that he was unable to quit it. After his return to Paris—though the age was one of immoderate drinking—the self-indulgence of the Prince was commented upon, and the fact that his confessor was a “notorious drunkard,” and then much in his society, did not tend to improve matters. Still worse did the vice become after his connection with Miss Walkenshaw, who—whether taught by the Prince, or from natural inclination—was herself addicted to it. Thus the habit—which, it is said, is the most difficult of all to abandon when youth falls under its yoke—had, within a few years, acquired a complete mastery over the Prince. The letters of Mann and Walton are full of allusions to the subject, and we learn, without much surprise, that when anything unusually vexatious occurred he drank harder than usual. Perhaps the most charitable construction—one not incompatible with the views of modern psychology—that can be put upon the actions of the Prince, which we are about to record, is to regard them as the results of an unsound mind. The medical teaching of the present day proves that the habitual drunkard is a

victim to the same mental disorders as the lunatic. His whole moral nature undergoes a complete change, his character is the antithesis of what it was before disease affected him, and in all that he does, he is actuated by the same motives as the insane. Morose, suspicious, obstinate, fitfully happy and fitfully violent, science has christened him by the name of dipsomaniac, and in France he is subject to the same restraints as the unsound. A dipsomaniac Charles was, if ever man deserved the name. And if, as the medical world maintains, drink is so terrible a poison, that when once it has enslaved its votary, it renders him the exact opposite of what he was before his bondage, then the contrast between the Charles of the '45 and the driveller at Florence is at once accounted for. Never did character undergo so complete a transformation. His bold daring degenerated into the most childish cowardice; his sensitive humanity, that was always loth to shed blood, changed into the worst kinds of brutality—cruelty towards woman; generous, so far as his means had allowed him, he became selfish, and meanly avaricious; his courtly manners, which had won the admiration of all who met him, were now changed to an uneasy swagger, and the coarse hilarity of a tavern haunter; from being a dandy, he became a sloven. Peevish, suspicious, easily offended, yet always offending, we are not surprised to learn from more than one envoy that he was considered no gentleman, and shunned even by those who wished to be loyal to him. Biography scarcely records a dawn more brilliant, a sunset more clouded.

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### *The Tichborne Imposture.*

It is a pity that some one possessed of the requisite knowledge and of suitable analytical power has not undertaken a study of the notorious Tichborne trial from a psychological point of view. No richer mine of erroneous observation and fallacious inference will easily be found. The sublime audacity of the Claimant has served to put in a strong and vivid light the truth, which is illustrated every day in a less striking way, that it is impossible to go too far in speculating upon the stupidity of mankind. And it may fairly be questioned whether those who, having for some time firmly believed that the Claimant was Sir Roger Tichborne, are now convinced that he was a vulgar impostor, deserve any more credit for their present disbelief than they did for their former belief in him. Neither the one nor the other has been founded upon a rational exercise of their mental faculties. They believed in him because their minds were much impressed with the knowledge which he displayed of

certain circumstances that occurred to Sir Roger, and which he had the means of easily learning, entirely overlooking all those facts of which he knew nothing, but which, had he been what he represented himself, he could not, having the memory which he had, possibly have forgotten. They were like those who testified to his identity with Sir Roger, and who, being struck with certain resemblances which they imagined they perceived, ignored altogether gross and palpable differences. This is one of the commonest fallacies in observation, and one which everyone who is accustomed to observe carefully knows well that he must guard against; it requires a better observer to take notice of differences than of resemblances; and hence it is that the testimony of most persons concerning identity based upon vague resemblances of features is valueless. The strong tendency to erroneous generalisation, which is thus manifested in perception, is manifested also in the formation of crude and hasty inferences from observation. A few instances of a like kind which seem to warrant the generalisation engage all the attention, while the opposing instances which entirely contradict it are overlooked; the mind, as Bacon remarked, being more moved by affirmative than by negative instances, although the latter are of more weight in philosophy. What would have become of the authority of weather prophets and of omens, of the saying that dreams come true, and of the opposite equally well founded saying that dreams go by contraries, of the proverb—"Talk of the devil and he's sure to appear," and of the belief in the special answers vouchsafed to prayers, were it not for this inherent tendency in the human mind to take note of coincidences and to neglect opposing instances. "And therefore it was a good answer," says Bacon, "that was made by one, who when they showed him hanging in a temple a picture of those who had paid their vows as having escaped from shipwreck, and would have him say whether he did not now acknowledge the power of the gods, 'Ay,' asks he again, 'but where are they painted that were drowned after their vows?'"

Why do those who at one time believed so hotly in the Claimant disbelieve in him now? And why did they cry out so loudly and contemptuously against the ignorance and folly of the people who sent to Parliament the advocate who lost no occasion, and forbore no speech or act calculated, to damn his client's cause? Is it that they have now trained themselves to examination of evidence and to think rationally

about it? Not at all: the same want of that which can be properly dignified by the name of reason, which influenced them to believe, has now influenced them to disbelieve. The jury having given a verdict, the Judge having made a long, clever, and ostentatious display of argument, unhappily flavoured with injudicial vituperation, the newspapers having joined in a chorus of approbation of the verdict and of execration of the culprit, they were convinced. They were infected with the prevailing tone; the contagion of belief spread to what they were pleased to call their minds; there was no reasoning about it; and if they were asked to set forth the grounds of their present opinion they would be as imbecile and foolish in the matter as they would be if they were asked to set forth the fallacies of their former belief in the Claimant. Such is the effect of mental infection, which causes multitudes to think and howl together, as jackals hunt, in packs. It is with the spread of a mental contagion as it is with the spread of a conflagration; the heat of the burning part raises the adjacent parts to a temperature at which they take fire, and one earnest fool fails not to make many fools. Few indeed are the persons whose beliefs are affected by arguments demonstrating their soundness or unsoundness; beliefs rest for the most part on foundations which arguments cannot reach—on feelings, sentiments, prejudices, habits, the bias of interests, wishes, or fears; and all history proves that a change of popular belief occurs not gradually in consequence of the assaults of reason, but takes place commonly with great suddenness, from no immediate help of reason, when a certain change of sentiment has unconsciously taken place in the public mind. Those who believe one thing to-day, as it were, believe another thing to-morrow, and they would, if asked, be utterly at a loss to set forth the reasonable grounds of either faith—nay more, there are not a few persons who manage to hold two irreconcilable beliefs side by side without ever being discomforted thereby. They don't really believe that Jonah was swallowed by a whale and lived three days and nights in its interior, but they would be sincerely shocked if they were charged with doubting the miracle.

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## PART II.—REVIEWS.

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### *The Lunacy Blue Book.*

- 1.—*Twenty-ninth Report of the Commissioners in Lunacy, 1875.*
- 2.—*Seventeenth Annual Report of the General Board of Commissioners in Lunacy, for Scotland, 1875.*

We had hoped, by deferring the notice of the Lunacy Books till the present number, that we should have had the Irish, as well as the English and Scotch Reports, but it has not yet come to hand. It does seem as though it would be worth while for the Irish Inspectors to put pressure on their secretary, so that their report should be out before much of its interest had died out.

The total number of the insane, so far as they are known to the Commissioners, was 63,793 in England, and 8,069 in Scotland; in all, 71,862.

The new cases for 1874, for both countries, were 14,333, excluding transfers from one establishment to another, but including re-admissions.

4,724 patients died during the year in Great Britain; and 5,768 recovered from their malady.

There was an increase of 1,766 in the total number in England, which is almost exactly the average increase for the past ten years. In Scotland the increase was only 85.

There was an increase of 887 in the new cases in England; while in Scotland there was a decrease of 95.

In England the rate of recovery in County and Borough Asylums was 38 per cent. on the admissions, which was at the rate of 3 per cent. higher than the average since 1859. In Scotland the rate was 39 per cent., being about the average.

The death rate in those institutions, in England, was 8·52 per cent. of the total number under treatment, and 10·67 on the average number resident. This was very slightly over the average rates. In Scotland the death rate was 5·6 on the total number under treatment; and 7·7 on the average number resident. This was almost 1 per cent. under the average for ten years. The difference between the rate of mortality in England and Scotland is very extraordinary.

In reference to the increase in the numbers of the pauper insane the English Commissioners say—

In the course of the last 17 years, through which the tables extend, the insane paupers have increased from 16·14 in 1859, to 23·55 in 1875, per 10,000 of the whole population; whereas, in the same period, the private patients have merely increased from 2·53 to 3·09 per 10,000 of the population.

The relative increase, however, of the population, and of the two classes of the insane under care in the 17 years past, is to be expressed as follows:—

The total population has increased, from 1859 to 1875, 21·63 per cent. The private patients *under care* have increased in number, as compared with 1859, 48·39 per cent.; and among the pauper patients, in the same interval, the increase of those *under care* has been 77·47 per cent.

The eleven statistical tables that follow are extremely well arranged and clear, giving the numbers in such a way that any non-professional reader would at once comprehend them. This is certainly as it should be, for the public at large have a vast interest in the subject of lunacy.

In the 4,180 deaths in England, only 2,250 *post mortem* examinations were made. This is certainly too small a proportion. Who is to blame for this?

The Medical Superintendents of the various Asylums estimated that only 2,431 of their 32,529 patients, or 7·47 per cent., were curable. The report says—

We have, in previous reports, drawn attention to the fact just noticed, that the County and Borough Asylums were gradually becoming more and more occupied by a large proportion of chronic and harmless patients, who might be adequately provided for in well-organised workhouse wards.

The Commissioners hammer away at the question of the night watching of the epileptics and the suicidal. They have, it is clear, studied the parable of the unjust judge to some advantage. Their importunity towards the Superintendents of Asylums in regard to all the arrangements that they wish carried out, has been a great fact in the history of the Commission, and its success has always been, in the long run, complete along the whole line.

In regard to the expenditure they say—

During the year 1874, the weekly cost, per head, of maintenance, medicine, clothing, and care of patients in County Asylums averaged 9s. 11 $\frac{3}{4}$ d.; and in the Borough Asylums 11s. 8 $\frac{1}{4}$ d.; in both, taken

together, 10s. 2 $\frac{3}{4}$ d.\* This cost approximates to 3d. per head less than in 1873, the reduction being, as it would seem, chiefly under the head of "Necessaries," which include fuel and gas. The particulars of this expenditure will be found in appendix (D).

The death of Mr. Bryan Waller Proctor is noted. He had been a Commissioner in Lunacy from 1832 till 1861.

In turning to the Scotch report, we may say that we think it a document of great interest, showing great care in its compilation, infinite pains in the manipulation of the statistics, with the view of eliciting some new fact, social or medical, and that it is highly creditable to the medical Commissioners. No one who really takes an intelligent interest in the subject of lunacy and its relations to society and medicine can sympathise with the criticism to which this report has been subjected in two of the weekly medical journals. We do not think that this journal can be accused of undue acquiescence in the views of the Commissioners in Lunacy; but it would be simply untrue that the medical officers of asylums generally sympathise with the spirit of the articles to which we refer. It would not be to the advantage of the insane that the medical profession at large should take the views of these articles in reference to the Commissioners. We cannot acquit the latter of having given some provocation direct, but more especially indirect, to those medical officers of asylums who take a medical view of insanity; we cannot even say that the tables in the Scotch report do not stand in need of more systematic arrangement, or that the use of every one of them is obvious; and we do say, most earnestly and emphatically, that the Scotch report ought to copy the form of the eleven statistical tables given in the English

\* The details of the average of weekly cost, are as follows:—

						County Asylums.			Borough Asylums.		
						£	s.	d.	£	s.	d.
Provisions (including malt liquor in ordinary diet) ...	...	...	...	...	...	0	4	9 $\frac{1}{8}$	...	0	5 2 $\frac{1}{4}$
Clothing... ..	...	...	...	...	...	0	0	9 $\frac{1}{4}$	...	0	1 1 $\frac{3}{8}$
Salaries and wages ... ..	...	...	...	...	...	0	2	0 $\frac{3}{4}$	...	0	2 5 $\frac{3}{8}$
Necessaries, <i>e.g.</i> fuel, light, washing, &c. ...	...	...	...	...	...	0	1	2 $\frac{1}{8}$	...	0	1 7 $\frac{1}{4}$
Surgery and dispensary ... ..	...	...	...	...	...	0	0	0 $\frac{7}{8}$	...	0	0 1
Wines, spirits, porter ... ..	...	...	...	...	...	0	0	1 $\frac{3}{8}$	...	0	0 1 $\frac{1}{2}$
Charge to { Furniture and bedding ... ..	...	...	...	...	...	0	0	5 $\frac{1}{4}$	...	0	0 6 $\frac{7}{8}$
Maintenance { Garden and farm ... ..	...	...	...	...	...	0	0	7 $\frac{1}{4}$	...	0	0 4 $\frac{1}{8}$
Account { Miscellaneous ... ..	...	...	...	...	...	0	0	4	...	0	0 6 $\frac{1}{8}$
Less monies received for articles, goods, and produce sold (exclusive of those consumed in the Asylum) ... ..						0	0	4 $\frac{1}{4}$	...	0	0 3 $\frac{7}{8}$
Total average weekly cost per head						£	0	9 11 $\frac{3}{4}$	...	0	11 8

report. But these are things capable of easy amendment, and do by no means imply that the Scotch Commissioners are so hard up for employment that they have taken to twisting numbers and making up tables from pure *ennui*. They have done, and are doing, good work. Certain things are necessary to the full measure of success of any such body; and we do not observe, from their report, that they are in any way more deficient in those than their brethren in London. All will admit that the chief of those things are a practical acquaintance with insanity; an active sympathy with the mentally afflicted; a sympathy with the men who manage and treat the insane; with their work and their difficulties; an earnest effort to do their duty; and, above all, an inflexible sense of justice. Asylum Superintendents, who think themselves ill-treated, have many ways of righting themselves; the insane, who may be wronged by the bad management of an institution, have very few. One of our Scotch brethren taught us that if we think the report of the Commissioners unjust, we can always get up a Commission of our own, and call in two of the ablest medical men we can get. That was a lesson for which all asylum men should be for ever grateful. It was just what was needed to put the relations between them and the Commissioners on a satisfactory footing—a court of appeal—the existence of which is certainly good both for the judge and the suitor.

In the Scotch report we think too much is made of a comparison between pauper lunacy and ordinary pauperism. The two things are about as difficult to compare as the state of art with the price of paints. The proportion of lunatics to the population is greatest in the rural counties, while the number of fresh cases coming under treatment every year is greatest in the urban counties, such as Renfrew and Lanark. The Scotch report is always strong on the question of insanity being a malady that is, to a large extent, preventible by training and right living, according to the laws of nature.

The following facts are interesting medically:—

As regards admissions, this table (table xx.) shows that in each of the months of April, May, June, July, August, and September, their number is considerably above the number in the different months of January, February, March, October, November, and December. This is true of both sexes. The admissions reach their maximum in July, the hottest month of the year. But they show a considerable rise in April, and go on rising steadily through May and June, till they reach their maximum in July, after which they fall, with more or less steadiness, from month to month, till they reach their minimum in January:

It has been shown that in the general population deaths from diseases of the nervous centres have their maxima in the period from January to May inclusive; and between this fact and the number of admissions into asylums in the different months of the year the relation is evident and interesting. We do not venture, however, to do more here than point out the facts; and such remarks as we have made are intended rather to show how the interpretation of the facts should be sought than to give the interpretation.

It is, perhaps, worthy of note that the progress of admissions into asylums, from month to month, over the year, is substantially the same as the progress of deaths by suicide in the general community.

Turning to the deaths in asylums, we find the maximum occurring in the cold months of December, January, February, March, and April, and the minimum in the warmer months of June, July, August, September, and October. Indeed, the progress of the total mortality in asylums appears to obey the same influences as those which regulate the progress of deaths in the general population.

It appears from this table (table xxi.) that, as regards the general community, deaths from diarrhæa have a decided maximum confined to the warmer months, and extending over July, August, September, and October, but expressed with much greater emphasis in August, than in any other month.

In asylums, on the other hand, there are two maxima, both expressed with comparative feebleness. One of these coincides, more or less closely, with the summer maximum in the general community; while the other, scarcely so well marked, occurs in December, January, and February, the cold months of the year. Can this depend on the fact that many patients, during the cold months of the year, are constantly confined to the artificially-heated apartments of the asylum, and thus, as it were, pass through two summers? Or, can it be that patients, from being much confined during the cold months of the year to the warm rooms of the asylum, suffer from internal congestions when they are sent out into the open air, without sufficient care being taken to clothe them adequately, or promote their circulation by active exercise?

It appears from this that the chances of recovery among patients admitted into asylums, are very considerable during the first two years after admission—nearly 40 per cent. of the 1,319 new cases admitted in 1868 having been so discharged, either during that or the succeeding year. On the other hand, of those who remained in asylums at the end of the second year, only 16 per cent. were discharged recovered during the third and fourth years.

The following results of an elaborate investigation are also interesting and important:—

*From Dr. Sibbald's Report.*

The proportion of pauper lunatics to ordinary paupers is, in the gross, nearly the same in urban and rural districts.

The percentage of the general population who are boarded in private dwellings, as pauper lunatics, is much larger for rural than for urban parishes.

Persons becoming pauper lunatics in urban parishes are almost always sent to an asylum in the first instance. Persons becoming pauper lunatics in rural parishes are frequently permitted to remain in private dwellings.

The percentage of the population who become pauper lunatics during the year is much larger in urban than in rural parishes.

The percentage of the population who remain chargeable as pauper lunatics at the end of the year, is much smaller for urban parishes than the percentage remaining chargeable to rural parishes.

The excess over rural parishes in the percentage of persons becoming pauper lunatics annually in urban parishes, consists entirely of an excess in the numbers sent to asylums. It results from this, that there is a slight excess in the number at the end of the year of urban asylum patients, though this is more than counterbalanced by the larger number of rural patients not in asylums.

The excess in the proportion annually becoming pauper lunatics in towns becomes ultimately less apparent, owing to a considerable number being found to have no legal settlement in any urban parish. These persons are transferred to the rural parishes to which they are found chargeable; and, as this is not counterbalanced by corresponding transfers from rural to urban parishes, it causes an apparent increase in the amount of rural lunacy.

Though the percentage of the population who remain pauper inmates of urban asylums, at the end of the year, is rather larger for them than for rural asylums, the excess is small in proportion to the excess in the number of admissions during the year.

The chief reason why the great excess in the number of admissions to urban asylums, over the number of admissions to rural asylums, does not produce a corresponding excess in the average number of inmates, are—

- (a) The much larger proportion of patients who are annually removed, recovered, from urban asylums; and
- (b) The somewhat larger proportion annually removed, unrecovered, from urban asylums.

There is no evidence in the statistics of death to justify the conclusion that a much larger proportion of persons suffering from fatal disease become pauper inmates in urban than in rural asylums.

It is probable that the excess of patients admitted into urban asylums consists chiefly, if not altogether, of persons who either rapidly recover, or soon cease to require asylum treatment, and who, if they had been resident in rural parishes, would not have been sent to an asylum.

The percentage of the population sent into asylums from the towns being greater than that sent from the country, may be accounted for

without necessarily supposing that more insanity is developed in urban than in rural communities.

The great question whether there is, or is not, a greater amount of insanity in urban than in rural communities remains, statistically, unanswered. My own opinion, *valeat quantum*, is that insanity is more common in towns than in country districts. But this opinion rests rather upon the evidence of greater physical degeneracy and disease, which has been shown to exist among urban than among rural populations, than on any statistical data at present available which bears directly on the question of lunacy. It is scarcely possible to believe that, if physical degeneracy of race and excessive mortality are found to be specially associated with urban life, the most delicate function of mind can be exempt from corresponding deterioration.

Dr. Paterson gives the following account of the rise and progress of the boarding-out system:—

The aggregation of a number of special licensed houses in one or two particular localities, which has led so many persons to imagine that the out-door system of providing for lunatics in Scotland was but a reproduction of that of Gheel, has rather been the result of accidental circumstances than of any efforts made in that direction by the Board of Lunacy.

There arose the danger of a divided authority and management, and of an inconveniently large aggregation of cases within a limited area. Under such circumstances, the care and judgment exercised in the selection, both of guardians and of suitable patients, are apt to be less strict and uniform, and the lunatics, instead of being absorbed and lost sight of in the family, have a tendency to become too distinct and prominent an element in the population of the place.

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*System of Positive Polity; or, Treatise on Sociology, Instituting the Religion of Humanity.* BY AUGUSTE COMTE. Second volume, containing Social Statistics, or the Abstract Theory of Human Order.

The second volume of Comte's Positive Polity, translated by Mr. Frederic Harrison, has quickly followed the first volume, to which we directed attention in a recent number of this Journal. Gratifying as it is to find that the philosophy of this great thinker is thus being made accessible to English readers, it is to be feared that, for some time to come, such readers will be a select few. Comte's method is so loose, and his style so diffuse, involved, wordy, and full of repetition, that it is really a hard matter to hold one's attention to his line of thought; and it is not unlikely that some readers will be repelled by the

difficulties of the task. However, there can be no question that those who persevere, and overcome the difficulties which meet them at the outset, will be rewarded for what they may have undergone. They will find this volume, like the former volume, to contain a great deal of suggestive thought, even should they rebel against some of the philosophical views set forth in it. They cannot fail to discover, furthermore, in it the anticipation of much that has taken its place, and is, year by year, taking its place in the thought of the day. No doubt much of what Comte propounded as his philosophy was in existence before he thought and wrote; but we have no sympathy with that petty and carping criticism which finds nothing original in him, except extravagance, at which it takes delight to sneer. It is easy enough to pick out passages from different parts of his works which are inconsistent with one another—and the work is worthy of a narrow and pedantic mind—and easy enough to impale other passages which seem ridiculous enough when separated from their context; but it would be equally easy for a critic, and would show more breadth of mind, and more sincerity and generosity of feeling, to select passages which would convey to his reader a far truer and nobler conception of Comte's wide intellectual grasp, and of the services which he has rendered to philosophy. If we put aside altogether the value of his system of philosophy, it would still be impossible to deny him the honour of having been the founder of sociology. And, surely, great men have not been so many in the world that we can afford to make light of the founder of a new science. Most of those who are ambitious to do greatly in their lifetime, and to be remembered through the ages, would be content with that position.

The first chapter of this volume treats of the general theory of religion, or the positive theory of Human Unity; the second, of the material problem of human life, and the theory of Property; the third, of the theory of the Family; the fourth, of the theory of Language; the fifth, of the theory of Social Organization; the sixth, of the theory of Social Existence; and the seventh, of the limits of Social Variation. In order to follow the doctrines set forth in these chapters, it will be necessary to have previously mastered the leading doctrines elaborated in the first volume; and they should also be judged, eventually, by the light of the historical illustrations of them contained in the third, and the practical application of them contained in the fourth volume. The four volumes, therefore, constitute a whole which will not be understood without

patient and systematic study by readers who bring to it some training in the less complex sciences, especially biology, and the disposition and habits of mind which are recognised as indispensable for the study of them.

It will easily be seen, then, that anything like an adequate review of the contents of the volume is out of the question on this occasion. We shall content ourselves with making a few extracts from it; not for the purpose of showing inconsistencies and errors, but rather with a view to show that there is something to be learnt from it. In reference to the doctrine of the relations of adjustment between an organism and its environment, which fills so large a place in modern evolutionary philosophy, take the following quotation:—

In the first place, every living being, though it be limited to a mere vegetative existence, is constantly modifying the environment on which it depends, through the substances which it consumes, and the products which it gives off. Besides, it modifies itself in order to accommodate its condition to its situation. This two-fold power of modification increases in the degree that the being rises in the scale of life, and becomes more highly developed. Now it is important to notice that the living being does not produce in the environment this capacity to receive the requisite modification. It confines itself to turning this capacity to account. Unless the environment were previously capable of modification in itself, the reaction arising from a source so feeble as that of the vital power necessarily is, would not succeed in changing the constitution of the medium around it. Again, the changes to which the material world is subject, from the mere conflict of the inorganic forces, are often far greater than all those which come from living beings. The only part, therefore, of these beings is to give to the world without the impulse which sets in operation a property of matter necessary to their very existence. But the only proper use to which this capacity for modification in matter can be devoted is simply to maintain this relation between the material world and living beings. Although we cannot conceive life existing in a sphere which is not capable of modification, we can readily imagine a sphere of such a kind, provided nothing be supposed to be living there, as in some of the uninhabitable planets. The normal capacity for modification which the material world presents is, therefore, intimately connected with the existence of life, though it is not the product of life.

As a result of this relation between the organism and its environment, there grows up in the progress of knowledge a perfect correspondence between man's brain and the world. Our practical wants originate real science, for it is, in the main,

for the purpose of modifying the order of nature that we need a knowledge of its laws. And, although we are in appearance exclusively pursuing material progress,

We are necessarily tending to the true perfection of the intellect, which is to transform our brains into a faithful mirror of the world which controls us.

Some of our modes of scientific precision, especially in astronomy, realise this high state of perfection, when the abstract elaboration of calculation within the human brain, duly prepared by training, comes to results identical with those of direct observation of the phenomena around us. Such harmony between the subjective and objective may be easily explained as a consequence of the natural law by which we are forced to draw from without the original material of our mental creations. This admirable combination of fact and thought, as difficult as it is important, becomes certainly one of the chief general results of human wisdom; nor could it be established until after immense preparation stretching over twenty-five centuries, and rising from the simplest to the most complex facts. We thus obtain order in our conceptions, even in our most spontaneous productions. In fact, the real laws of our moral and mental nature belong essentially to this system of positive science, between which they furnish the chief connecting links.

The chapter on the Theory of Language we have found very instructive, perhaps because we have read it more attentively than the other chapters. One extract must suffice here. After comparing language with religion in its origin and function, pointing out that it arises from feeling, and is perfected by thought, and after showing that its relations are with social life, and that it is transformed by, and along with, society, thus testifying by sure signs to the unselfish character of man's active existence, "even in the midst of the empire of egoism over society." Comte sums up thus:—

Following out these general truths, we may sum up the great analogy between language and religion by this formula: that language is the expression of that essential unity which religion creates. Failing to seize this, the only point of view which is really universal, philosophers, both of the theological and of the metaphysical schools, have hitherto missed the profoundly social character of this institution. It is so essentially relative to the social, and not to the individual side of man, that mere personal impressions have never obtained any adequate expression, as is seen in the constant difficulty which the sick experience in expressing their sensations. To give the lowest degree of completeness to language, the influence of men in association must always be presupposed; and, indeed, the co-operation

of successive generations is quite as indispensable as that of contemporary individuals. The greatest efforts of the most systematic genius would always fail to construct by themselves any real language. And thus this, the most social of all institutions, places in hopeless contradiction those retrograde philosophers who are bent on limiting their science to the individual point of view. Indeed, the very sophisms by which they blaspheme humanity itself could not be uttered at all, but for a system of expressions which are the work of long generations of men co-operating together.

The work has been well translated by Mr. Frederick Harrison ; but there has been a too free use of stops, commas having been inserted in such a lavish way, and not unfrequently in such improper places, as to increase the difficulties of the author's style. The translator has enriched the volume with clear and concise marginal notes, and has added a very complete table of contents.

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*Christian Psychology: The Soul and the Body in their Correlation and Contrast. Being a new Translation of Swedenborg's Tractate de Commercio Animæ et Corporis, with Preface and Illustrative Notes.* By T. M. GORMAN, M.A. Longmans and Co., 1875.

From Comte to Swedenborg is a considerable leap ; and one may easily surmise what the disciples of the one prophet will think of the pretensions of the other. Mr. Gorman has no doubt of the superiority of his prophet to all other prophets ; Swedenborg is a Saul among the prophets, taller by a head and shoulders than all the rest of them, "the greatest master in philosophy the world has ever seen," whose writings may be said to stand apart, and to be without parallel in the history of human speculation. To all those whose eyes are not blinded by prejudices, whose feelings are not debased by a malignant envy, and whose judgments are not vitiated by a pitiful self-conceit, it is "plain as way to parish church" that "in breadth and depth of mental group, in comprehensiveness of plan, and in the consistent and continuous development of first principles and truths, these remarkable writings may be said to stand apart, and to be without parallel in the history of human speculation." "These be prave words ;" but let no man dare to question them, or he will instantly fall under the furious pelting of the pitiless storm of Mr. Gorman's abusive epithets. For Mr. Gorman swells to a magnificent height of virulence as he broods over the greatness of his subject, and the greatness

of the wrongs done to him, and, like a little naughty boy who is very angry, explodes in questionable language, and frantically flings mud in all directions. Having been acquainted with two or three Swedenborgians, and having found them to be calm, genial, amiable, temperate, courteous, and benevolent gentlemen, we had lapsed into an opinion that there must be something rare in a religion which made such excellent men, or, at any rate, which such excellent men professed. But we are sorry to find that it was a hasty and ill-founded induction; for assuredly no reader of Mr. Gorman's remarks will pronounce him to be either calm, or genial, or amiable, or temperate, or courteous, or gentle. However, we have been amused to read his outbursts of vituperation, and hope sincerely that he feels better for having thus relieved himself and put things right. In these days of general scepticism and wide-spread cynicism, it is refreshing to meet with a man who has a genuine faith—even though it be a fool's faith—and is eager to do battle for it against all the world.

One of the editors of this Journal is unlucky enough to come in for some of the fiercest outpourings of the vials of Mr. Gorman's wrath. As it will probably please Mr. Gorman that our readers should have the opportunity of perusing what he has written, we give an extract from his Preface, in which he falls foul of—strangely associated pair for his abuse—Cardinal Manning and Dr. Maudsley. In the Appendix he returns to the charge, and presents the spectacle of a brave man contending with difficulties as he labours in vain to find strong enough words to express his abhorrence, and detestation, and contempt of the feeble “maundering,” “puerile fantasies,” and “pestiferous influence” of the latter “boastful dogmatizer,” whose “audacious and mischievous (one might be justified in saying *insane*) attempt” to describe “purely mental phenomena as if they were nothing but higher activities of brute matter,” will be pronounced “by those who are acquainted with even the rudiments of the subject to be destitute of a single genuine conception or a single coherent sentence.” Surely Mr. Gorman ought to feel relieved after this liberation of his righteous feeling of indignation, and henceforth to try to acquire something of the calm self-complacency and serene placidity of the mighty prophet whom he has taken under the shadow of his somewhat ruffled wings.

The following extract is from the Preface:—

It is not easy to characterise, in measured language, the iniquitous attempts that have been made from time to time, in certain reviews,

to defame and blacken the reputation of one who, in consequence of the vast and varied services he has actually rendered to the cause of intellectual and spiritual truth, is justly entitled to the highest regard and honour of all honest men.

Certain misguided persons have had recourse to the meanest and most malignant subterfuges, in the vain endeavour to fasten upon the object of their contempt or hatred, the offensive and slanderous epithets of visionary, enthusiast, madman, heretic, spiritualist, and even impostor. So true is it that—

Be thou as pure as ice and as chaste as snow,  
Thou shalt not escape calumny.

Among those who have most shamefully distinguished themselves, in these most unchristian and unmanly attempts, may be mentioned Dr. Maudsley and Dr. (now Cardinal) Manning. Among the calumniators of Swedenborg, these two persons may be regarded as fitly representing the “schools of thought” to which they respectively belong.

Dr. Maudsley ranks among the most daringly unscrupulous and pertinacious of those who, blinded by self-conceit, and regardless of facts, have most grossly and maliciously slandered the great name of Swedenborg. To those who possess any real acquaintance with the subject, his “criticisms” present a tissue of foul misrepresentations, arising in part from his having, in his eagerness to speak evil of one whose teachings he did not like, allowed himself to become the dupe of a wicked forgery, the so-called “Book of Dreams” fraudulently attributed to Swedenborg.\* This flippant, and (regarded from a strictly Christian point of view) sometimes profane writer has, in the present instance, perpetrated a most discreditable blunder. His easy credulity, when he wished to believe, has become the occasion of furnishing a most instructive example of the folly of trusting too implicitly opinions of “experts!” Did not the common sense of mankind act generally as a counter-check to such hap-hazard modes of judging in grave and difficult cases, the class to which Dr. Maudsley belongs would soon become a dangerous and intolerable social nuisance.

So much, then, for the hallucination respecting Swedenborg, of which certain apostles of mere Rationalism, and “specialists” in matters of lunacy, are the unhappy victims.

\* The full title of this bestial fabrication is *Swedenborg's Drömmar, 1744, jemte an dra hans anteckningar. Efter original-handskrifter medellade af*, G. E. Klemming, Stockholm, 1859. Among those who were soonest and most easily befooled by this gross and palpable fraud was the author of a so-called “Life of Swedenborg,” which, in common justice, must be pronounced to be a farrago of egregious folly and vanity, literary blunders, garbled quotations, and coarse calumnies, deserving of the hearty execration of all who cherish the least regard for common honesty and candour, in literary matters. This is obviously not the place to expose in detail the stupid and disgusting exhibitions of ignorant and malignant mendacity in question. It will suffice to have thus called attention to the subject, apparently for the first time; and to have indicated to the reader the true character of the so-called “Dream Book.”

A few words must suffice to show how intimately allied, in spirit and purpose, it is possible for two libellers of an illustrious Christian philosopher to be, who, in other respects, stand before the world so far apart.

Dr. (now Cardinal) Manning, by the violence and malignity of the language he has deliberately employed, has made himself a fitting representative of Swedenborg's most bitter and unscrupulous enemies, among religious zealots. This astute and ardent champion of the most recent of the many modern evolutions of Papal fanaticism, and who so lately—

To his own new deity sacrificed,  
And was himself the victim and the priest,

has had the hardihood to write thus concerning one of the most gifted of human beings:—

“There have been claimants to supernatural power, who have appealed to their miracles in proof of their mission, and who have taught otherwise than the Church. They are impostors; and their wonderful works are either mere deceptions, or they are done through the co operation of the enemy of God and of the human race. These remarks apply to such pretenders to Divine communications as Montanus, Mahomet, Swedenborg, the Jansenists, and modern spiritists.”\*

Considering the principles, spirit, and motives of the “faction” to which this writer has so ardently attached himself in the Church of his choice, the epithet he here deliberately employs to characterise Swedenborg conveys a slander of the deepest dye. The charge of religious imposture involves the most odious and awful form of human guilt. And yet this most horrible charge is unblushingly preferred by a victim of modern Vatican spiritual sorcery, in manifest violation of truth and charity, against one who, in reality, ranks among the most upright, pure-minded, and marvellously gifted of human beings, and who was specially endowed with “a spirit divinely touched to fine issues!”

It ill becomes Cardinal Manning, under any circumstances, to make use of the term “impostor,” seeing that he has blindly delivered himself over, soul and body, to the service of a religious system, undeniably based on known and confessed forgeries and imposture.

In the case of Swedenborg, the Cardinal's language transgresses the limits of all decent and honourable controversy. His violence stands in striking contrast to the moderation and justice of other enlightened members of the great religious communion of his adoption. Impelled by a fierce spirit of proselytism, blinded by the false glare of his own perverse imaginings, and led by fallacies which have their origin in one of the most malignant forms of religious prejudice, this wily propagandist and champion of “Vaticanism,” or the new form of Christian

\* “Essays on Religion and Literature,” p. 310.

Gentilism, may plume himself on having obtained a complete victory over the absent object of his false and slanderous expressions. But Swedenborg, also, has something to say concerning religious imposture. Like another Abel, in presence of another Cain, "he being dead yet speaketh."

Those who are attracted by Mr. Gorman's seductive advocacy to read Swedenborg's Tractate, should not overlook the authority on which its principles rest. There is a spiritual world, in which spirits and angels dwell, and a natural world, in which men dwell; and this is a truth which, up to the incarnation of Swedenborg, had lain concealed from mankind. For no angel had ever got leave, or, if he had, had thought it worth while, to come down to the natural world to teach it orally, nor had any man been able to ascend to the spiritual world and to look in and see how things were going on there. "Lest, therefore, owing to ignorance of the existence of such a world, and to a wavering and unsettled faith respecting heaven and hell resulting from this ignorance, mankind should grow infatuated to such a degree as to become atheists of that type which refers all things to Nature as their source, it has pleased the LORD to open the sight of my spirit, and to cause it to ascend up into heaven, and also to go down into hell, and to display to its view the distinctive character of each." Thus it came to pass that the Lord at length had compassion upon mankind, and sent unto them a prophet, whose name was called Emanuel Swedenborg, presenting him with an unlimited supply of return-tickets to heaven and hell. In him the Lord Jesus Christ made his second coming for the institution of a new church, described in the Revelations under the figure of the New Jerusalem. When we have to do with those who are inspired from heaven, criticism and scepticism are necessarily put out of court; they have clearly no place in the discussion of a privilege which no one else from the beginning of the world has had, and which no one, therefore, is qualified to gainsay. "I once heard from heaven the voice of one saying"—says Swedenborg: Who, then, can say him nay?

We are not of that number who think that Swedenborg was a blasphemous impostor, for we hold that his sincerity may be made good at the cost of his sanity. But what shall we say of Mr. Gorman, M.A., of Hertford College, Oxford? When we find a man of his presumed education pouring out in shrill hysterical clamour all the abuse which he can command upon those who smile at Swedenborg's insane pretensions, and refuse to accept the fantasies of a monomaniac as revelations from

God, we know not well how to express the mixed feelings which the spectacle excites. See how Mr. Gorman's evil speaking has corrupted good manners; for we were tempted to exclaim—"Call you this thing a man? Aye, in the common category it passes for such."

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*Effectual Reform in Man and Society.*—By HENRY TRAVIS, M.D.—Longmans and Co.

The author begins his book by saying, "that the time is come when that which men have in vain endeavoured to realise during the past, in the formation of character, and in the attainment of happiness, may be accomplished. Each generation has hitherto been very badly educated, because it has been born into a world in which all its predecessors have been badly educated—comparing that which has been and is with that which should be, and is to be. And this inheritance of evil, from generation to generation, must continue until the knowledge is obtained by which the change from evil to good will be produced; or by which men will be enabled to effect this change, and in which it will commence." How, then, is this large promise of speedy amelioration to be fulfilled? By the acquirement of new knowledge and of new or greatly improved feelings; these being first acquired by a few otherwise intelligent men and women, who become the agents for propagating them to the mass of the population. And how are these new feelings to be acquired? By the developement of the social rather than the self-regarding feelings—in fact, by following the good old rule to do to others as you would have others do unto you. And the new knowledge required is a knowledge of the causes that have produced evil in the past, and of the causes and means by which good instead of evil will be produced in the future. All which appears to be true enough, though we do not see anything new in it. Men have known theoretically what they should do to one another for many, many ages; but they have not succeeded yet in realising that they are members of one body, of one social organism, and that when one member suffers all the members suffer with it. But they are slowly learning the lessons which nature teaches in its own stern way. Those who fare sumptuously and live in great houses are taught the duties of humanity to their less fortunate fellows, by the contagious character of the fevers which miserable habitations and bad food breed. The

poorest and most wretched outcast can effectually prove his common humanity in that way, and can exact attention and care from those who dread this emphatic proof of a common human sympathy. Nothing is so effectual as selfishness in teaching unselfishness. Social feeling must inevitably spring from enlightened self-regarding feeling.

Dr. Travis is of opinion that the new formation of character and the new state of society will be based upon the knowledge of a fundamental truth, and upon the application of it. Now, this fundamental truth is composed of two truths, which have been wrongly supposed to be inconsistent with one another. The first is this: That the formation of a man's determinations (and of his opinions and his character) is dependent upon conditions in the individual, *i.e.*, internal; and upon conditions in the outward means by which he is influenced, *i.e.*, external. The second truth is that man forms his determinations, or is a personal agent in the forming of them. Both these parts of the fundamental truth must be accepted by any one who aspires to master the subject. The author having thus brought us into the thick of the difficulties with regard to free-will and determination, leaves us unconcernedly there for the present, promising to extricate us in a separate pamphlet to be called, *What is the Will?*

Supposing his readers to be indoctrinated with ideas of enlightened benevolence, and to desire a state of things so arranged as to promote the greatest happiness, not of the greatest number, but of every individual, he proceeds to give a general description of the arrangements of the new system by which this is to be accomplished. This system appears to be a reproduction, in all its chief particulars, of the scheme which Mr. Owen propounded for the regeneration of society, though it differs from it in some important respects. As Dr. Travis considers it to be the only system by which man and society can be effectually reformed, he thinks it may appropriately be called "EFFECTUALISM." "The 'Effectualist,' or the 'Effectual Reformer,' will thus be distinguished from the advocates of plans, or systems, or 'philosophies,' by which the 'Effectual Reform of Man and Society' can never be produced." We fear that Dr. Travis is too sanguine, and that the same cause which made the Garden of Eden a failure will prevent the success, for ages to come, of Effectualism.

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## PART III.—PSYCHOLOGICAL RETROSPECT.

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### *French Retrospect.*

By S. W. McDOWALL, M.D., and J. G. McDOWALL, M.B.

*Annales Médico-Psychologiques* for 1874. (Continued from page 126.)

*On the Action of small doses of Digitalis on Maniacal Excitement, particularly in that of Epileptics.*

While temporarily occupying the position of the Superintendent of the Asylum for women at Bordeaux, Dr. Bigot renewed his experiments on the action of digitalis on maniacal excitement. From 450 patients, ten of the most excited were selected, and treated with 10 minim doses of the tincture twice daily. Of these patients, one recovered from her excitement in one day, four others partially on the fourth or fifth day, and in the rest little or no improvement took place.

On becoming physician to the Asylum of Bonneval a new series of experiments was undertaken by Dr. Bigot. To ten patients labouring under great excitement, chronic, acute, epileptic or purely maniacal, the same drug was administered in similar doses for about a fortnight, in conjunction with the use of the usual tepid bath of one or two hours' duration. In two cases this treatment was discontinued in less than the fortnight, the pulse becoming extremely slow, and syncope appearing imminent. No benefit resulted in any of the cases. Dr. Bigot ascribes the dissimilar results obtained in the two experiments to difference in temperament in the two populations, and to the variability in energy of the drug.

The same treatment administered to a number of epileptics liable to attacks of intense excitement, was followed by great success. All the epileptics who took the tincture, whether at the beginning of, or during their excitement, became quiet on the second or third day, whilst it was notorious that usually it lasted a much longer time. These now following are notes of nine cases treated in this manner during the year 1873:—

Obs. 1—B. (Celine). A woman, aged 28. Had suffered during several years from attacks of hysterical epileptic mania at her menstrual periods. In the asylum she exhibited constant slight choreic movements, and during the first six months two or three epileptic attacks of ordinary intensity were observed in the night. At all times irritable, whilst menstruating she made herself dreaded by all about her. The tincture was given from the 4th to the 20th January. An attack of excitement, during menstruation, occurred

at the beginning of this interval, and terminated in one day in outbursts of tears. The excitement at the next period was of short duration, and terminated similarly, there remaining a tendency to weep on the slightest provocation. Treatment was then directed to the hysteria, atropine being administered from April to December. Its use was accompanied by a gradual diminution of the chorea and epilepsy. Her mind remains enfeebled, and her emotions susceptible, but she has been saved from becoming a dangerous epileptic, and she works. The good result of the treatment in this case is doubtless due to the hysterical substratum of the disease.

Obs. 2—Céline, G. A tall, healthy girl of nineteen. She was somewhat demented, and said that she first suffered from epilepsy two years since, after exposure to cold during menstruation. Her attacks, always severe and preceded or followed by excitement, were worse during the menstrual week. Bromide of Potassium was given with temporary benefit, but in January, 1873, she became ungovernable, incapable of understanding what was said to her, or of doing anything. The administration of the tincture lowered the pulse, during the first fortnight, from 104 to 72, and was followed by an exceedingly calm menstrual period. During the following two months the digitalis produced a similar, and even more satisfactory result. Two months later she died during a series of fits.

Obs. 3—Léonie, M. Aged 40. Has been epileptic since the age of nine. Before taking digitalis her attacks of excitement lasted about fifteen days, during which time she was obscene and dangerous. On the first two occasions on which it was administered, quietude resulted on the second day; on the third occasion it was less successful. Subsequently the drug was given at intervals, with the result of diminishing the intensity and duration of the epileptic attacks, and greatly moderating the preceding excitement.

Obs. 4—Eugène, L. Aged 37. Single, epileptic from infancy. His attacks are of two kinds, moderate and severe. During two out of every five or six days he has about twelve attacks, of which two are severe. These are followed by great excitement. Digitalis in the same dose at first cut short the excitement, and after some months prevented it. The attacks are much diminished in intensity, but not in number. The pulse fell from 82 to 60.

Obs. 5—Charles C. Aged 32. Imbecile from infancy, when he suffered from hemiplegia of the right side. His epileptic attacks recur every eight days; are numerous during the day, and are followed by stupor, then by violence. Under digitalis the pulse fell from 80 to 66, and the excitement was cut short on the second day. He died of erysipelas in April.

Obs. 6—Charles P. Aged 33. Epileptic about twelve years. For some days in each month he has several attacks daily; then a week of excitement and reckless violence. Under digitalis the pulse fell from 98 to 60, and the excitement was cut short on the third day, and did

not reappear for three months. From time to time, until the end of the year, it was administered with complete success, the excitement being replaced by semi-stupor. The epileptic attacks are diminished in intensity.

Obs. 7—Michel S. Aged 45. Became epileptic twenty years ago, during the year of his marriage. He is tall, well-made, and demented. During three days of the week his attacks were frequent, severe, and accompanied by great excitement; the rest of the week was spent in quietude. Every two or three months an attack of increased intensity was observed. Digitalis at once substituted a semi-stupor for the excitement, and diminished the intensity of the attacks of epilepsy.

Obs. 8—Louis P. Aged 29. Epileptic for ten years. The attacks, rare at first, appear every three or four days, from four to six attacks per day. Dangerous excitement existed for twenty-four hours before the first attack. Administration of digitalis, at first successful, failed on a second occasion, notwithstanding the reduction of the pulse from 110 to 56. A third trial was successful, but eventually atropine was substituted for the digitalis with the result of diminishing the number of attacks without reducing the excitement.

Obs. 9—Louis G. Aged 46. Epileptic from youth; powerful, somewhat demented, and very dangerous during excitement. For some months atropine was given, but without reducing the excitement. Atropine and digitalis were then given together, with the result of quelling it before, during, and after the attacks.

In concluding, Dr. Bigot dwells on the importance of the treatment by which the dangerous form of excitement which accompanies epilepsy may be calmed.

### *Idiotism and Consanguinity.*

By DR. MAURICE BINET.

Are marriages of consanguinity always followed by a tendency to degeneration in the offspring? or are they only so when contracted by unhealthy individuals? These questions, important as they are, are yet unanswered; it is, therefore, well that all cases bearing on the subject should be investigated and published.

In the following cases the injurious action of consanguine marriage appears to be evident. There lives in the town of Ch. (Nièvre) a family composed of husband and wife, both well-made and intelligent, and three idiot children, who, on reaching a certain age, suffered from arrested physical development. The physical constitution, the mental state, or the habits of the parents, failing to account for the condition of the children, a careful investigation of the family history revealed the following facts:—

1st.—The grandmothers of the parents were sisters. They married men having no relationship to them or to each other.

2nd.—From these marriages were born—from the elder, two sons and five daughters; from the younger, two sons and two daughters.

One of the sons of the younger married one of the daughters of the elder, his cousin-german. (1st marriage of consanguinity.) His brother married a woman who was not a relative.

3rd.—The father and mother of the degenerated offspring were children of these two brothers. They are then cousins-german. (2nd marriage of consanguinity.)

There exists two marriages between near relatives on the side of the father, and one on the side of the mother.

It is affirmed that in these families no hereditary taint, such as epilepsy, insanity, idiocy, or scrofula, has been observed. Further, it has been ascertained that the direct progenitors have been healthy, moderately intelligent, and not short-lived. The father of the idiots is an only son, and lost his father by an accident. The mother has married sisters and brothers who have healthy children. On marriage the father was twenty-six years of age, the mother thirty; they are sober and regular in their habits, and in tolerably good circumstances.

The history of the children is as follows:—

A. The first, a boy, was born at the full period, twenty-seven months after marriage. Up to the fifth month of pregnancy the mother suffered from vomiting and loss of appetite, after which she regained flesh. A normal labour of three hours was followed by rapid recovery. The child was healthy for five weeks, after which it began to suffer from vomiting, loss of flesh and strabismus, maladies from which it continued to suffer, more or less, until death. Its weight, clothed, never exceeded 7 kil. 500, but when about a year old the arrestment of growth became more apparent. It suffered from hernia, and from constipation up to the last month of its life, when chronic diarrhœa supervened. It could not stand. Its intelligence was not less feeble, never having been seen to laugh or to recognise anyone, or heard to cry, except when suffering from colic. It died at twenty months in a state of complete marasmus, being unable to take any food. It was never seen to be convulsed, but it coughed, and was generally drowsy.

B. The second child was a girl, born twenty months after her brother. The confinement and pregnancy, in all respects, were similar to the former, but with the view of placing the child under more favourable circumstances, it was sent to a wet nurse. After five weeks the same vomiting appeared, and at two years the same arrest of development is evident. The child is uneasy in any posture but that of lying, being too feeble to preserve any other. She weighs 5 kil. 500; her height is 63 centimetres.

The diameters of her head present the following measurements:—

Bi-parietal	.	.	.	.	.	0 m. .115
Bi-temporal	.	.	.	.	.	0 „ .087
Occipito-frontal	.	.	.	.	.	0 „ .228
Mento-occipital	.	.	.	.	.	0 „ .160
Mento-frontal	.	.	.	.	.	0 „ .130

Sensibility is obtuse, and intelligence wanting.

C. The third is also a girl. The phenomena of pregnancy and delivery resemble those of the two former cases. The history of the child is also precisely similar. At ten months and a half she weighs five kilogrammes, that is only five hundred grammes less than her sister, not yet having reached the period when arrested development became more marked in the two other children.

The diameters of her head are as follows :—

Bi-parietal	.	.	.	.	.	0 m. .110
Bi-temporal	.	.	.	.	.	0 „ .100
Occipito-frontal.	.	.	.	.	.	0 „ .140
Mento-occipital.	.	.	.	.	.	0 „ .177
Mento-frontal	.	.	.	.	.	0 „ .109

In all particulars she resembles her brother and sister.

This observation is interesting in the highest degree. Thus, on one side, are three children whose lives intra- and extra-uterine are precisely similar, in whom at the same periods the same phenomena are observed, and whose constitutions, physical and mental, are singularly feeble. They carry in their behaviour and appearance the stamp of an idiocy so similar that it is difficult to distinguish one from the other. Again, on the other side, are parents healthy, moderately intelligent, of regular habits, without privation, and free from vice, hereditary or acquired.

The facts appear to indicate the cause of degeneration in the offspring to be consanguineous marriage, the effects of which become startlingly manifested after successive unions in the same family.

*On the Condition of the Eyes in General Paralysis.* By DR. MOBECHÉ.

At considerable length the author points out that early writers on general paralysis have either quite omitted, or but casually dwelt on, the eye symptoms of the disease. Thus in the works of Esquirol, Bayle, Calmeil, Delaye, Foville père, Daveau, Thore, &c., but little importance is attached to these symptoms. In 1849 M. Baillarger observed that many patients have one pupil larger than the other, the difference in some cases being so great that it is astonishing that this observation had not been made sooner. This symptom sometimes exists from the beginning of the disease, and may now, in doubtful cases, aid in diagnosis ; generally, however, it is not seen till an advanced period.

Attention being thus attracted to the symptom, nearly all subsequent observers have noted the state of the pupils. In 1853 M. Lasèque observed inequalities of the pupils in one-third of his cases, and, in the last stages, rapid enfeeblement of vision, often more advanced in one eye than the other. In 1853, also, M. Moreau (de Tours) published the result of his researches into the peculiarities

of vision in general paralytics, and summarised as follows:—1st. Convexity of the eye ball exists in two-thirds of the cases. 2nd. Inequality of the pupils is seen in more than half. 3rd. In half the cases the eyebrows do not preserve their arch. M. Marcé, after noticing irregularities of the pupil, adds that in certain cases lesions of the eye, such as rapid loss of vision, strabismus, or ptosis have preceded the unmistakeable symptoms of general paralysis.

M. Billod in 1863 published the results obtained by observation of the eyes of four hundred patients, and relates two cases where paralysis of the third pair has coincided with general paralysis. In 1873 Ach. Foville published similar observations, and concludes that in some cases general paralysis is consecutive to an affection of the nervous system, the disease being propagated to the hemispheres from a cranial nerve.

Dr. Mobeche gives the results of his own observations at the Asylum of Ville. Evrard. He finds that in the majority of cases the pupils are abnormal, the most frequent lesion being inequality, whilst irregularity is also very common. Inequality is most frequently due to dilatation of one pupil, the other remaining normal; less frequently to undue contraction of one pupil.

The state of the pupils in 93 patients is thus tabulated:—

Pupil	{	Right greater	.	.	32	}	57	}	93			
		Left greater								.	.	25
		No inequality								.	.	

Follin has estimated that the normally contracted pupil in the adult measures 2 mill. The following table gives the measurements of the pupils in 93 cases observed—

Pupils measuring less than 2 mill.		. . . 23	186
"	" from 2 to 3 mill.	. . . 114	
"	" from 3 to 4 mill.	. . . 20	
"	" from 4 mill. and above	. . . 29	

M. Lasèque found the pupils more frequently contracted than dilated, a result which M. Moreau believes attributable to the examinations having been made at an early stage of the disease. The latter observer has published the following table, but does not state to what diameter any of the three classes corresponds:—

Pupil	{ Large . . . 26 }			100
	{ Middling . . . 56 }			
	{ Little . . . 18 }			

The contractility of the iris is very often modified in general paralysis. Often, when but slightly dilated, it acts slowly and incompletely, and when closely contracted does not dilate in darkness, or when vision is directed to a distant object. This is not due to adhesions, as it readily dilates when treated with atropine.

Unequal dilatation and loss of contractility are not the only symp-

toms which the eye of the general paralytic presents. In a large number of cases the pupil has lost its circular form, and displays the most varied shapes. When the pupil is contracted, often immovable, its shape is nearly always irregular, angular or jagged. Pupils normal as to size and contractility are those in which form is least frequently changed; but they are not rarely found altered. They take sometimes the form of a polygon with blunt, rounded off angles, and unequal sides, somewhat resembling pupils deformed by adhesions. A common form is that of the ellipse, the great arc of which may be in any direction, or it may be quadrilateral or triangular. When there is great dilatation, the most common form of irregularity is where half or two-thirds of the pupil is circular, and the circumference completed by nearly straight lines, resembling a segment of a sphere joined to a segment of a polygon. Lastly, the opening of the pupil may not be in the centre of the iris. These somewhat rare cases are seen only in dilated pupils, and indicate that dilatation has not taken place to an equal extent in all directions.

The state of the pupil frequently varies, passing from contraction to dilatation in a day. These changes are observed chiefly at the beginning of the disease, when the pupils are contracted or but slightly dilated. Dr. Mobèche has never seen a dilated pupil retake its normal dimensions, while the other dilated in its turn. The majority of authors affirm that alterations in vision are rare until an advanced stage of the disease is reached, an opinion founded probably on imperfect examination. By means of the typographical scale of Giraud-Teulon, accurate results may be obtained, the patient's sight being defective if he can read only 3 or 4 in the scale at the distance of a foot. By this means difference in power between the two eyes may be observed. It is difficult to state, in precise figures, the relations which exist between sharpness of vision and dilatation of the pupils, defects attributable to other causes possibly being present. As a general rule patients, whose pupils are not abnormally dilated, can read No. 2 and No. 3. In these cases there is rarely a difference between the eyes; where there is, the iris has quite lost its mobility. Where the pupil was dilated to from 2 to 3 mil. no great difference in power was observable, but, after this, dilatation and diminution in power increased together.

Contraction of the pupil, unless where the iris had lost its mobility, did not produce serious modification of sight.

It would be erroneous to conclude from the frequency of the abnormalities of the eye in general paralysis that the retina is diseased in all these cases; and it is necessary, as a rule, to search for the causes in other parts.

It has already been stated that the mobility of the iris was generally decreased as dilatation increased. These patients are in the position of individuals whose pupils have been dilated by Belladonna, their vision remaining intact for distant objects, but confused for objects near at hand.

If the abnormally dilated pupil be artificially contracted, vision becomes equally good on both sides, or nearly so. "We have instilled into the eyes of several of our patients, in which one pupil was dilated, some drops of collyrium of éserine, and after the pupils had become of equal dimensions there did not remain a sensible difference between the acuteness of sight of the two sides; cases where a lesion of the retina existed being excepted."

Austin believes that there exists an intimate relation between the state of the iris and the mental condition of the patient. He asserts that in cases where the right pupil is affected, the patient will be depressed and melancholic; where the left, the patient will be maniacal and possess exalted delusions.

Further, if the state of the iris becomes changed, the mental condition will also be changed. These ideas have not been confirmed by other authors, and do not correspond with the results obtained by Dr. Mobèche.

B. There now remains to inquire what are the causes of this difference between the pupils. Authors are far from agreed on this point. M. Baillarger is of opinion that general paralysis is the result of a lesion of both hemispheres, often more extensive, however, on one side than the other; and that the degree of abnormality of the pupil serves to indicate in which of its halves the brain is most extensively diseased.

M. Billod having established that serious defects of sight were unusual, except in the advanced stages of the disease, whilst inequality of the pupils was common in all stages, rejected lesions of the optic nerve as causes of this dilatation, except in rare cases. He then proceeded to search for these causes in the iris itself. He recalls that contraction of the iris is controlled by the common oculo-motor nerve, and that it is quite involuntary, being excited by the action of light on the retina, and not on the iris, which is insensible, and receives the influence by reflex action. Section of the optic nerve produces dilatation and immobility of the iris, and irritation of the inner cut surface contraction; that is the same result as that produced by the action of light on the retina. Again, section of the common oculo-motor nerve behind the ophthalmic ganglion produces immobility of the iris, although the retina or optic nerve be irritated. M. Billod considers dilatation to be the result of the common oculo-motor nerve.

M. Voisin looks for the cause of dilatation exclusively in the great sympathetic, in the cilio-spinal centre. When this centre is, to a certain extent, hyperæmic, the action of the cervical sympathetic is increased, and the corresponding radiating fibres of the iris contract energetically, producing dilatation. When softening has supervened, the dilatation gives place to contraction and immobility. The great sympathetic being thus paralyzed through its centre of innervation, all movement is restricted to the circular fibres, controlled by the

common oculo-motor nerve, resulting in contraction of the pupil. This is not seen until the last stage of general paralysis.

The views of Billod and Voisin are thus diametrically opposed, the former locating the lesion in the third pair, the latter placing it in the great sympathetic.

M. Voisin affirms that if the oculo-motor nerve was diseased, in addition to dilatation, there would be external strabismus, ptosis and diplopia. He also places contraction of the pupils among the symptoms of the last stage of the disease; this, however, is contrary to general observation.

"We believe the opinions of these two authors to be extreme. Lesions of the pupil may be the result either of an alteration in the common oculo-motor nerve, or in the great cervical sympathetic." M. Voisin says that if the nerve of the third pair was paralysed, external strabismus or ptosis would be observed. But in paralysis of the ciliary muscle, which is equally under the control of the common oculo-motor nerve, mydriasis is often seen, and rarely affections of other parts controlled by that nerve. In certain cases, then, dilatation will be produced by a lesion analogous to that which produces paralysis of accommodation, which moreover often accompanies mydriasis, whilst in others it will be the result of hyperæmia of the medulla and increased activity of the great sympathetic. Similar considerations are applicable in cases where the pupil is contracted.

Should the retina be insensible, dilatation may be present without lesion either of the oculo-motor or sympathetic nerve, but disease of the retina is probably generally preceded by an affection of one or other. The graver lesions of sight, as amblyopia and amaurosis, are not common in general paralysis, but are liable to be passed over, more especially when the affection is limited to one eye. Total blindness of both eyes is rare, Dr. Mobèche having observed but three cases. Amaurosis appears at various stages of the disease, most frequently late, but it may precede all other symptoms. Several of these latter cases have been reported, and have been specially investigated by M. Ach. Foville. He believes that in some patients general paralysis results from the extension of disease to the brain, from peripheral portions of the nervous system. He regards such cases, however, as forming exceptions, not the rule. Paralysis of the third pair has also been observed during the course of the disease.

M. Moreau has drawn attention to a well marked increase in size of the eye-ball. Among 100 individuals he found forty in which the convexity was considerably increased, and twenty-five in which it was slightly so. Dr. Mobèche's researches have given the following results:—

Eyes with convexity	{	Considerably increased	. 5	}	26
		Slightly increased	. 18		
		Diminished	. 3		
		Normal	. 67		
					<hr/> 93

M. Moreau has also called attention to the state of the eyebrows in these patients. He has nearly always found them separated at their inner ends; fifty-one in a hundred lost the normal arch, rising on the forehead or falling on the eye like a moustache. The condition of the eyebrows in Dr. Mobèche's case was as follows:—

Eyebrows	{	Encroaching on the root of the nose . . . . .	11	}	27
		Leaving the arch . . . . .	16		
		Following all the arch . . . . .			
					66
					<hr/>
					93

*Bulletin de la Société de Médecine Mentale de Belgique.* Nos. 1-4, 1873. (Continued from page 136.)

*On the use of Restraint.*

M. Ingels regretted that Dr. Lentz, in his paper, had not entered fully the question of principle, and proposed, in a few words, to direct the attention of the Society to it.

In consequence of the arrangements in the greater number of their asylums, the physician spends in it at most a few hours daily, resulting in the use of restraint being placed at the discretion of those left in charge of the patients, and being regarded by them as a necessary evil. In England a similar condition prevailed before Conolly, who took the bold step of at once forbidding all restraint in his asylum, an attempt which proved successful beyond expectation; his example having been generally followed throughout England. It is, therefore, an established fact, that the management of the insane is practicable without the use of mechanical restraint. There are, however, certain shadows in the smiling picture which has sometimes been painted of non-restraint.

This word, in its wider signification, is not completely applicable to the system, for often some patient must be restrained, and this is effected either by simple holding, or by seclusion. As to continued manual restraint, its use is unjust to the attendants, and it may be looked for that they will, in time, lose patience, and proceed to acts of violence, and the frequent occurrence of late of broken ribs in English Asylums may perhaps, in this manner, be largely accounted for; it seems better, then, to resort occasionally to mechanical restraint, than to look for an angelic patience in attendants.

The entire disuse of the means of restraint is apparently founded on an exaggerated sentimentality, or an over-regard for the feelings of the patients, many of whom, however, offer a much longer and more determined resistance to manual than to mechanical, while in others the slight shock produced by the use of the latter is beneficial. The following case illustrates this:—

A man found wandering by the police was admitted to the Hospice-Guislain in a state of great excitement, and during the formalities of admission stabbed himself in the neck, wounding the internal jugular vein. Hæmorrhage having been checked by digital compression, and sutures introduced, he remained comparatively quiet for two days, and lost no blood. On the third day he again became intensely excited, and was kept in bed by two attendants, opium and chloral having been administered without effect. In the evening, hæmorrhage having recurred, the strait-jacket was employed, and, though protesting against it, he submitted quietly to its use, and continued quiet. Though afterwards, from time to time, excited, he was always obedient.

It is true that in a similar case restraint would have been employed in England, for its disuse is not so absolute as, at first sight, it appears to be. In the analysis of asylum reports, in the "*Journal of Mental Science*," Oct. 1873, it is stated that mechanical restraint is adopted in preference to manual in surgical cases, and in cases of extreme violence and determined suicide. Its adoption in the latter class of patients is to be wondered at, for, as pointed out by M. Lentz, it is in it that the worst results are obtained. In England, as in other countries, delirious fever patients are restrained mechanically; why not also the violent insane? While the use of restraint is to be praised, its abuse is to be blamed, and it is better for a patient to move about in the open air partially restrained, than to be secluded with his limbs entirely free. Connected with seclusion there is another difficulty to be met, that of the patients tearing their bedding and clothing, and thus becoming exposed to the cold, and, as yet, no satisfactory mode of dealing with it has been proposed. In such cases it is better to secure the patient in bed, and it is thus that they are dealt with at the Hospice-Guislain.

There is undoubtedly among attendants a tendency to abuse restraint, especially in cases of dementia which are restless at night, and leave their beds, but, still, while here careful watching is to be preferred, the apparently inoffensive patients may create serious disturbance. Forced decubitus is thus a form of restraint which ought to be retained, and, further, its employment permits the use of a urinal, thus preventing the formation of bed sores. What is greatly to be desired is the formation of dormitories with few (from six to 20) beds, where watching could be easily carried out, and a minimum of noise secured; and that this may become practicable the number of patients in one asylum must be limited to five hundred.

M. Le President considered the term non-restraint to be a play on words, for the cell, in that system, took the place of the strait-jacket, a change which, he believed, all present agreed with him in regarding as far from beneficial.

M. Lentz, also, did not accept the term non-restraint. He, however, believed that forced decubitus should be abolished. M. Vermeulen

and M. Ingels differed from him. M. Bulckens thought restraint should be diminished, not abolished, and recommended a form of screw for attaching fetters to the limbs. M. Le President was of opinion that the discussion had shown that the Society was agreed that the limitation, and not the abolition, of restraint was advisable.

After some discussion on the formation of special wards for suicidal and fresh cases, the discussion closed.

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## PART IV.—NOTES AND NEWS.

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### DR. BUCKNILL'S RESIGNATION.—THE VISITORSHIP OF CHANCERY LUNATICS.

On the 4th inst. we had occasion to announce the resignation by Dr. John Charles Bucknill, F.R.S., of the office of Lord Chancellor's Visitor of Chancery Lunatics. The circumstances under which Dr. Bucknill has, at a comparatively early age, been under the necessity of resigning so distinguished a position, call for wide and sincere sympathy. For some time his health has been failing, and a prolonged tour on the American continent, undertaken several months ago, has proved insufficient to restore to him the bodily vigour necessary for the performance of his duties; and a strenuous attempt to struggle through his labours, in defiance of his physical impairment, has been followed by his resignation.

It is scarcely necessary to state that Dr. Bucknill, both during his earlier career and while acting as Chancery Commissioner in Lunacy, has done work which commands the respect of the profession. His intimate knowledge of practical psychology, and his great command of general information, have enabled him to produce works on the subject of lunacy and psychology which promise to stand for a time preeminent in the literature of the specialty, even though the department of science is one in which rapid strides are being constantly made. The character of the work which Dr. Bucknill has already accomplished leads us to hope that though physical weakness has compelled him to relinquish duties which involve almost constant travelling, yet rest and retirement may enable him to enrich still further the literature of a branch of the profession of which he is the acknowledged head.—*Medical Times and Gazette*, Dec. 18th.

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### SUICIDE OF THREE GIRLS.

The self-destruction of three sisters at Florence is mentioned in a letter from that city, published in the "Patrie." Not many days ago Madame Polonio was walking in the evening in the gardens of the Piazza Lipia with her three daughters—Maria, Emma, and Olga, respectively twenty-one, eighteen, and fifteen years of age. They were apparently in good spirits, and not a word escaped them to give the slightest suspicion of the terrible resolution which they had taken. The following morning the three young girls were found lying together on the floor, the still smouldering ashes of some charcoal in a brazier giving sufficient proof of the cause of death. The only explanation that presents itself is that the young ladies had their imaginations excited by mystical and extravagant theories which they had found in some of the books they had read.

## EXAMINATION IN MEDICAL PSYCHOLOGY IN THE UNIVERSITY OF EDINBURGH.

Candidates for the Degree of M.D. in the University of Edinburgh are now allowed, as an alternative to the former questions in moral philosophy, to select medical psychology as the subject of examination, and the following were the questions to be answered at the last examination.

In the same University candidates for the Degree of M.B. are to be allowed to count a three months' clinical clerkship in an asylum as equivalent to the same period of out-door dispensary practice.

ALTERNATIVE PAPER for Moral Philosophy, University of Edinburgh. Preliminary Examination, Wednesday, 13th October, 1875. Questions in Moral Philosophy for Bachelors of Medicine.

1. State briefly what is meant by that element of civilization termed *refinement*—how it is manifested, mentally and corporeally; and what are its causes.

2. Illustrate the operation of solar light and heat on man in the development of ethnic characteristics of the intellect and the moral sentiments.

3. What cerebral conditions are due to poverty and what to luxury, so that moral and intellectual degeneration results.

4. Define moral insanity and moral imbecility respectively, and state the difference as to the causes of each.

5. Under what conditions of health do loathing of life and the desire to die, known as suicidal melancholia, occur?

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## Appointments.

BROWNE, J. CRICHTON, M.D., Ed., has been appointed by the Lord Chancellor Medical Visitor in Lunacy, in place of Dr. J. C. Bucknill, who has retired in consequence of ill-health.\*

BOND, J., L.R.C.P.Ed., L.M., L.R.C.S.I., has been appointed Assistant Medical Officer to the Haydock Lodge Lunatic Asylum, Newton-le-Willows, vice Johnstone, resigned.

CROWDACE, J.H., L.S.A., has been appointed Assistant Medical Officer to the East Riding of Yorkshire Lunatic Asylum, Beverley.

DE DENNE, T. V., L.R.C.P.Ed., M.R.C.S.E., has been appointed Assistant Medical Superintendent of the Bristol Lunatic Asylum, Stapleton, vice Dickson, resigned.

DURRANT, C. M., M.D., F.R.C.P.L., has been appointed Visiting Physician to Lunatic Asylums in the Borough of Ipswich.

M'KECHNIE, A., M.B., C.M., L.R.C.S.Ed., has been appointed Assistant Medical Officer to the Inverness District Lunatic Asylum, vice Weir, whose appointment has expired.

\* DR. CRICHTON BROWNE.—We learn from the *Times* that the Lord Chancellor has appointed Dr. Crichton Browne to the important post of Medical Visitor of Lunatics, in place of Dr. Bucknill, who has retired from ill-health. Dr. Crichton Browne, as we need hardly remind our readers, has been for several years the medical superintendent of the West Riding Lunatic Asylum at Wakefield. In that capacity he has not only organised the work of the asylum in a manner which has earned the warmest praises of successive Government Inspectors and of the West Riding Justices, but he has raised the character of the Institution to such a point that its name is now known and respected throughout the scientific world. His appointment to the office of Medical Visitor is a well-deserved recognition of his labours and attainments: but the loss of his services at Wakefield will be severely felt by the West Riding Bench.—*Leeds Mercury*, Dec. 13.

ROGERS, E.C., M.R.C.S.E., has been appointed Senior Medical Officer to the Three Counties Asylum, Beds, vice Dr. Sutherland Rees-Philipps, resigned.

PHILLIPS, J. D., L.F.P. & S. Glas., L.M., has been appointed second Assistant Medical Officer to the Fisherton House Lunatic Asylum, Salisbury, vice Andrews, resigned.

PACKER, W. H., L.S.A.L., has been appointed Junior Assistant Medical Officer to the Gloucestershire Lunatic Asylum, near Gloucester, vice Cassan, appointed House-Surgeon to the Royal South Hants Infirmary, Southampton.

TAYLOR, E., L.K.Q.C.P.I., L.M., L.R.C.S.I., has been appointed Assistant to the Resident Physician and Governor, State Criminal Asylum, Dundrum, Co. Dublin.

WADE, A. L., M.D., L.R.C.S.I., has been appointed Assistant Medical Officer to the Warwick County Lunatic Asylum, Hatton, vice Woods, appointed Medical Superintendent of the Kerry Lunatic Asylum, Killarney.

WINSLOW, Dr. L. S. F., has been appointed Lecturer on Psychological Medicine at the Charing-cross Hospital Medical School, vice Hunt, deceased.

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#### THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

A Quarterly Meeting of the Medico-Psychological Association was held in Edinburgh, in the College of Physicians, on the 14th December. The Report is deferred until our next No.

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#### NOTICE.

A QUARTERLY MEETING OF THE MEDICO-PSYCHOLOGICAL ASSOCIATION will be held in Glasgow during the first week of March, 1876. Notices of communications to be sent to the Hon. Secretary before the 20th February.

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*(The Editors are indebted to Dr. A. Newth, of the Sussex County Asylum,  
 . . . for the compilation of this Index.)*











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